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INSECTS OF HAWAII

A Manual of the Insects of the Hawaiian Islands, including an Enumeration of the Species and Notes on their Origin, Distribution, Hosts, Parasites, etc.

A Series under the General Direction of
ELWOOD C. ZIMMERMAN

VOLUME 11, SUPPLEMENT
DIPTERA: DOLICHOPODIDAE
APPENDIX (PHORIDAE)

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University of Hawaii Press, Honolulu
1969

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THE UNIVERSITY OF HAWAII PRESS
Library of Congress Catalog Card Number 48-45482
Standard Book Number 87022-921-4

Published with the approval of the Director of
the Hawaii Agricultural Experiment Station

Printed in the United States of America

PREFACE

Members of the family Dolichopodidae may be differentiated from other flies by their long legs, elongated heads, the r-m crossvein situated near the basal one-fifth of the wing, cells M_1 and M_2 fused, the cubital cell poorly developed, and the absence of the ptilinal suture. Dolichopodids are a diverse group, occurring over most of the world, but they are found in largest numbers in moist areas of the tropics and subtropics.

The work reported in this paper reveals that there are at least 208 species of dolichopodids in the Hawaiian Islands. Species of the genera *Campsicnemus* and *Eurynogaster* are by far the best represented of the endemic fauna, and the genus *Campsicnemus* appears to be more highly developed in the Hawaiian Islands than anywhere else in the world. Of the approximately 185 species of *Campsicnemus* found in the world, 136 are Hawaiian. The genus *Eurynogaster* is known only from the Hawaiian Islands, and this work brings the total number of species of *Eurynogaster* recorded to 56.

This report is intended as a supplement to the general study of the Hawaiian Dolichopodidae made by Hardy and Kohn in *Insects of Hawaii*, Volume 11 (1964). Eleven new species of *Campsicnemus* and nine new species of *Eurynogaster* are described. Revised keys to the Hawaiian species of these genera are given, as well as new distribution records and notes on synonymies.

Holotypes and allotypes of the new species are deposited in the Bernice P. Bishop Museum, and, when available, paratypes are preserved in the University of Hawaii collection.

The specimens used in this study were from the collections of the B. P. Bishop Museum and of the Department of Entomology, University of Hawaii. I wish to express my appreciation to the Bishop Museum for loan of their valuable specimens and to the Department of Entomology, University of Hawaii, for providing me with the insects and facilities to conduct my research.

I am grateful to Dr. D. E. Hardy, who suggested to me the present study topic, and without whose encouragement this study would not have been possible; and to Dr. Frank Haramoto, for his many suggestions, critical appraisal, and effort on my behalf.

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GENUS CAMPSICNEMUS HALIDAY

Medeterus (*Camptosceles*) Haliday, 1832, J. Zool. 5:357. Suppressed by ICZN, 1958, op. 531:349.

Campsicnemus Haliday, 1851, in Walker's Insecta Britannica, Diptera 1:187.

Emperoptera Grimshaw, 1902, Fauna Hawaiiensis 3:81. Synonymy by Hardy and Kohn, 1964:17.

The genus *Campsicnemus* is distinguished from the closely related *Eury-nogaster* by the presence of acrostichal bristles, the m crossvein shorter than the last section of M_{3+4} , and the relatively small and inconspicuous male genitalia. The genitalia are of little diagnostic importance in *Campsicnemus*. The middle legs of the males, however, are important in differentiating species. They are often extremely ornate and bear variously developed spines, bristles, or projections, and the leg itself is frequently twisted, flattened, or distorted. The basitarsi sometimes have a terminal spur or are covered with fine cilia.

Williams (1939:292) has reported that some of the species of *Campsicnemus* are water skaters on slow-moving surface waters such as mud puddles, pools, and quiet parts of streams. All of the 136 known species of *Campsicnemus* in Hawaii are apparently endemic.

Type species: *Dolichopus scambus* Fallén.

CHECKLIST AND DISTRIBUTION OF HAWAIIAN SPECIES OF **CAMPSICNEMUS**

| | Hawaii | Maui | Molokai | Lanai | Oahu | Kauai |
|------------------------------------|--------|------|---------|-------|------|-------|
| <i>acuticornis</i> Parent | | | | | × | |
| <i>aeptus</i> Hardy and Kohn | | × | | | | |
| <i>albicomus</i> n. sp. | | × | | | | |
| <i>albitarsus</i> Hardy and Kohn | | × | | | | |
| <i>amblytylus</i> Hardy and Kohn | × | | | | | |
| <i>aurilobus</i> n. sp. | | | × | | | |
| <i>bellulus</i> Van Duzee | | | | | × | |
| <i>bicirritus</i> n. sp. | × | | | | × | |
| <i>bicoloripes</i> Parent | | | | | × | |
| <i>bicrenatus</i> Hardy and Kohn | | × | × | | | |
| <i>biseta</i> Hardy and Kohn | | | × | | | |
| <i>breviciliatus</i> Parent | | | | | × | |
| <i>brevipes</i> Van Duzee | | × | | | × | |
| <i>brevitibia</i> Hardy and Kohn | × | | | | | |
| <i>brunnescens</i> Hardy and Kohn | | × | | | | |
| <i>bryophilus</i> (Adachi) | | | × | | | |
| <i>calcaratus</i> Grimshaw | | | × | | | |
| <i>calcaritarsus</i> Adachi | | | × | | | |
| <i>camptoplax</i> Hardy and Kohn | | × | | | | |
| <i>capitulatus</i> Hardy and Kohn | | × | | | | |
| <i>carinatus</i> Hardy and Kohn | | × | | | | |
| <i>chauliopodus</i> Hardy and Kohn | | × | × | | | |
| <i>ciliatus</i> Van Duzee | | | | | × | |
| <i>clinotibia</i> Hardy and Kohn | | | × | | | |
| <i>comatus</i> Hardy and Kohn | | × | | | | |
| <i>compressus</i> Hardy and Kohn | | | | | × | |
| <i>congregatus</i> Malloch | | | | | × | |
| <i>coniculus</i> Hardy and Kohn | | × | | | | |
| <i>contortus</i> Parent | | | × | | | |
| <i>cracens</i> Hardy and Kohn | | | × | | | |
| <i>crassipes</i> Hardy and Kohn | × | | | | | |
| <i>crinitibia</i> Van Duzee | × | | | | × | |
| <i>crispatus</i> n. sp. | × | | | | | |
| <i>crossotibia</i> Hardy and Kohn | | | | | × | |
| <i>crossotus</i> Hardy and Kohn | | × | | | | |
| <i>deficiens</i> Parent | | | | | × | |
| <i>depauperatus</i> Parent | | | | | × | |
| <i>diamphidius</i> Hardy and Kohn | | × | | | | |
| <i>dicondylus</i> Hardy and Kohn | × | | | | | |
| <i>diffusus</i> Hardy and Kohn | × | | × | × | | |
| <i>digitatus</i> n. sp. | × | | | | | |
| <i>disjunctus</i> Hardy and Kohn | | × | | | | |
| <i>distinctus</i> Hardy and Kohn | | × | | | | |
| <i>distortipes</i> Grimshaw | × | | | | | |
| <i>divergens</i> Van Duzee | × | | | | | |

* New island record.

| | Hawaii | Maui | Molokai | Lanai | Oahu | Kauai |
|--|--------|------|---------|-------|------|-------|
| <i>drymoscartes</i> Hardy and Kohn | × | | | | | |
| <i>ephydrus</i> Hardy and Kohn | | × | | | | |
| <i>exiguus</i> Hardy and Kohn | | × | | | | |
| <i>eximius</i> Hardy and Kohn | | × | | | | |
| <i>expansus</i> n. sp. | | × | × | × | | |
| <i>ferrugineus</i> Parent | × | | | | | |
| <i>fimbriatus</i> Grimshaw | × | | | | | |
| <i>finitimus</i> n. sp. | × | | | | | |
| <i>flavipes</i> (= <i>flavithorax</i>) Hardy and Kohn | × | × | | | | |
| <i>flaviventer</i> Hardy and Kohn | × | × | × | | | |
| <i>flexuosus</i> Parent | | | | | × | |
| <i>fragilis</i> Parent | | | | | × | |
| <i>fulvifacies</i> Hardy and Kohn | | | × | | | |
| <i>fumipennis</i> Parent | × | | × | | × | |
| <i>furax</i> Parent | | | | | × | |
| <i>fusticulus</i> Hardy and Kohn | × | × | | | × | |
| <i>gloriosus</i> Van Duzee | × | | × | × | × | |
| <i>goniochaeta</i> Hardy and Kohn | × | | | | | |
| <i>grimshawi</i> Van Duzee | × | | | | | |
| <i>haleakalae</i> (Zimmerman) | | × | | | | |
| <i>hardyi</i> n. sp. | | × | | | | |
| <i>helvolus</i> Hardy and Kohn | | | × | | | |
| <i>hispidipes</i> Hardy and Kohn | × | | × | | | × |
| <i>hoplitipodus</i> Adachi | × | | | | × | |
| <i>hygrophilus</i> Hardy and Kohn | × | | | | | |
| <i>impariseta</i> Hardy and Kohn | × | | | | | |
| <i>inaequalis</i> Hardy and Kohn | × | | | | | |
| <i>indecorus</i> Hardy and Kohn | | | × | | | |
| <i>inermipes</i> Malloch | | | | | × | |
| <i>insuetus</i> Hardy and Kohn | | | | | | × |
| <i>invaginatus</i> n. sp. | | | × | | | |
| <i>labilis</i> Hardy and Kohn | | × | | | | |
| <i>latipenna</i> Hardy and Kohn | | × | | | | |
| <i>lepidochaetes</i> Hardy and Kohn | | × | | × | | |
| <i>longiciliatus</i> Parent | | | | | × | |
| <i>longiquus</i> n. sp. | × | | | | | |
| <i>longitibia</i> Hardy and Kohn | | | × | | | |
| <i>loxothrix</i> Hardy and Kohn | × | | | | | |
| <i>macula</i> Parent | × | × | | × | | |
| <i>mediofloccus</i> Hardy and Kohn | | × | | | | |
| <i>membranilobus</i> Parent | | | | | × | |
| <i>mirabilis</i> (Grimshaw) | | | | | × | |
| <i>miritibialis</i> Van Duzee | | | | | × | |
| <i>miser</i> Parent | | | | | × | |
| <i>modicus</i> Hardy and Kohn | × | | | | | |
| <i>mucronatus</i> Hardy and Kohn | | × | | | | |
| <i>mundulus</i> Hardy and Kohn | | × | | | | |

* New island record.

| | Hawaii | Maui | Molokai | Lanai | Oahu | Kauai |
|-------------------------------------|--------|------|---------|-------|------|-------|
| nambai Hardy and Kohn | | × | | | | |
| nigricollis Van Duzee | | | | | | × |
| nigroanalis Parent | | | | | × | |
| norops Hardy and Kohn | | | | | | × |
| obscurus Parent | × | * | × | | | |
| olympicolus Parent | | | | | × | |
| ornatus Van Duzee | | | | | × | |
| pallidus Parent | | | | | × | |
| paniculatus Hardy and Kohn | × | | | | | |
| parvulus Hardy and Kohn | × | | | | | |
| patellifer Grimshaw | | | | | × | |
| penicillatus Parent | × | × | × | | | × |
| perplexus Hardy and Kohn | | × | × | | | |
| petalcnemus Hardy and Kohn | | | × | | | |
| pherocteis Hardy and Kohn | | | | | | × |
| philohydratus Hardy and Kohn | | × | | | | |
| planitibia Parent | | | | | × | |
| platystylatus Hardy and Kohn | | | | | | × |
| plautinus Adachi | | | | | | × |
| profusus Hardy and Kohn | | × | | | | |
| putillus Parent | | | × | | | |
| pynochaeta Hardy and Kohn | × | | | | | |
| rectus Malloch | | | | | × | |
| restrictus Hardy and Kohn | | | | × | | |
| rhyphopus Hardy and Kohn | | | | | × | |
| ridiculus Parent | | | × | | | |
| sciarus Hardy and Kohn | | | | × | | |
| scolimerus Hardy and Kohn | × | | | | | |
| setiger Hardy and Kohn | × | | | | | |
| silvaticus Hardy and Kohn | × | | | | | |
| simplicipes Parent | | | × | | | |
| sinuatus Van Duzee | × | | | | | |
| spinicoxa Hardy and Kohn | × | | | | | |
| tarsiciliatus Parent | | | | | × | |
| terracolus Hardy and Kohn | × | | | | | |
| tibialis Van Duzee | × | | | | | |
| truncatus Hardy and Kohn | | × | | | | |
| uncatus n. sp. | | | × | | | |
| undulatus Hardy and Kohn | | × | | | | |
| uniseta Hardy and Kohn | | × | | | | |
| vafellus Parent | | | | | × | |
| viridulus Hardy and Kohn | | × | | | | |
| williamsi Van Duzee | | | | | × | |

* New island record.

KEY TO SPECIES OF *CAMPSICNEMUS*, BASED UPON MALES
(Revised from Hardy and Kohn, 1964)

1. Wings reduced to narrow, lanceolate appendages.....2
 Wings normal, well developed.....5
- 2(1). Middle basitarsus one-fourth to one-third as long as
 second tarsal segment and with a spur at apex. Mid-
 dle tibia swollen, with a cluster of dorsal bristles
 near apical third.....3
 Middle basitarsus equal to or longer than second seg-
 ment, no spur at apex. Middle tibia slender, with
 four or more bristles arranged along dorsal surface....4
- 3(2). Spur on middle basitarsus strongly curved at a right
 angle at about middle, enlarged and rounded at
 apex, basal half of spur pilose. Dorsal bristles of
 middle tibia not short and peg-like, arranged in a
 row near apical third.....*aepus* Hardy and Kohn.
 Spur on middle basitarsus curved near base, otherwise
 straight, rather slender, parallel-sided, and bare.
 Middle tibia with a cluster of dense, short, peg-like
 dorsal bristles at apical third.....*bryophilus* (Adachi).
- 4(2). Wings with a well-developed apical bristle. Middle
 tibia with four dorsal bristles. Mesonotum polished
 black.....*mirabilis* (Grimshaw).
 Wings without an apical bristle. Middle tibia with
 seven long posterodorsal bristles. Mesonotum sub-
 opaque, bronze-brown.....*haleakalae* (Zimmerman).
- 5(1). Middle femur with an anterior projection at or near
 apex6
 Middle femur without an anterior projection.....7
- 6(5). Anterior projection on middle femur hook-like. Mid-
 dle tibia with a polished area at middle extending
 down anterodorsal surface. Three to four long dorsal
 bristles on front tibia at about apical one third....
 *williamsi* Van Duzee.
 Anterior projection on middle femur in the form of a
 thin extension of the femur, terminated by a black
 bristle; associated with the projection is an anterior
 invagination extending through about one-half the
 width of the femur (fig. 3b). Front tibia without
 long dorsal bristles.....*invaginatus* n. sp.

- 7(5). Middle tibia with a projection near base or at middle (in *C. insuetus* Hardy and Kohn).....8
 Middle tibia with not more than a slight, barely perceptible bump at base or at middle; if the tibia possesses a projection, it is on the apical third or fourth and the middle basitarsus has a strong black apical spur29
- 8(7). Middle tibia extending beyond the insertion of basitarsus and with about five very long curved bristles at apex.....**gloriosus** Van Duzee.
 Middle tibia not so extended at apex and without such bristles.....9
- 9(8). Middle tibia slender, not noticeably swollen or sinuate..10
 Middle tibia distinctly swollen and/or sinuate.....14
- 10(9). Arista thickened and flat. Projection at base of middle tibia very well developed, shaped like the handle of a cane and nearly one-third as long as the tibia**platystylatus** Hardy and Kohn.
 Not as above.....11
- 11(10). Wings broadest at about a level with the apex of vein M_{3+4} , narrowed apically and very strongly narrowed basally. Third tarsal segment of front legs flat and thick on basal three-fifths, developed into a slight hook.....**latipenna** Hardy and Kohn.
 Wings and front tarsus normal.....12
- 12(11). Thorax and antennae predominantly yellow. Four pairs of well-developed dorsocentral bristles present. Middle femur constricted at apex. Middle tibia with truncate posteroventral bristles and middle femur with well-developed ventral bristles. Eyes contiguous on face.....13
 Thorax and antennae predominantly brown to black. Five pairs of dorsocentral bristles present. Middle femur not constricted apically and lacking strong ventral bristles. Middle tibia lacking truncate posteroventral bristles. Eyes separated on the face by a width equal to two and one-half to three rows of eye facets.....**grimshawi** Van Duzee.
- 13(12). Middle tibia with a row of long hair-like anterior bristles only on apical half of segment. Middle femur with two strong ventral bristles near middle. Front

- tibia lacking a dorsal bristle.....
**nambai** Hardy and Kohn.
- Middle tibia lacking anterior bristles except for about six small bristles near middle. One dorsal bristle near middle of front tibia.....**flavipes** Hardy and Kohn.
- 14(9). Middle tibia with a strong swelling at about basal two-fifths, densely covered with short bristles and hairs over the anterodorsal surface. A strong knob-like process on anterior margin at about middle of tibia, the knob densely covered with long curled bristles.....**insuetus** Hardy and Kohn.
- Middle tibia not as above; projection usually smaller and situated near base of segment.....15
- 15(14). Middle basitarsus one-fourth to one-half longer than tibia16
- Middle basitarsus distinctly shorter than tibia.....19
- 16(15). Middle basitarsus one-half longer than tibia. Projection at base of middle tibia broad and truncate....
**philohydratus** Hardy and Kohn.
- Middle basitarsus about one-fourth longer than tibia.
 Middle tibia with a somewhat twisted, pointed projection near base.....17
- 17(16). Middle tibia with a pointed projection at apical one-third. Middle femur lacking a row of anteroventral bristles near apex. Hind femur with five to six long anteroventral bristles.....**contortus** Parent.
- Middle tibia without a pointed projection at apical one-third. Middle femur with a row of short anteroventral bristles at apical one-third or one-fourth. Hind femur with only one to three long anteroventral bristles18
- 18(17). Basal projection on middle tibia broad and ear-like (fig. 1e-f); an anterior row of fine, long, widely spaced yellow hairs, extends from middle to apex of tibia, and apical one-third without flat scale-like bristles.....**aurilobus** n. sp.
- Basal projection on middle tibia slender and pointed; tibia lacking long yellow cilia, and apical one-third with a cluster of three or four flattened scale-like bristles.....**lepidochaetes** Hardy and Kohn.
- 19(15). Middle tibia very long, about twice as long as middle femur, and middle basitarsus only one-fourth to one-

- fifth as long as middle tibia.....20
- Middle tibia shorter and basitarsus at least one-third as long as tibia.....21
- 20(19). Basal projection on middle tibia long and slender, finger-like (fig. 2b); apical two-thirds of middle tibia densely long-haired, the hairs curled at apices. Middle basitarsus straight, without long cilia.....
.....**digitatus** n. sp.
- Basal projection on middle tibia small and rounded; no long cilia on middle tibia (fig. 3c). Middle basitarsus bowed, entire dorsal surface densely covered with long curved hairs.....**longiquus** n. sp.
- 21(19). Middle femur thickened basally, and enlarged and expanded apically on anterior face; thickened part with rows of sharp bristles which decrease in size to apical one-third. Hind femur with a row of evenly spaced anteroventral bristles.....22
- Not as above. Hind femur with only one to three short, black, anteroventral bristles placed close together near middle or near base.....24
- 22(21). Basal projection of middle tibia in the form of a thin curved yellow process terminated by a stout curved black bristle, giving a hook-like effect (fig. 3g). Middle tibia expanded on anterior surface above middle into two overlapping lobes. Middle femur straight on ventral margin distad of thickened part.....
.....**uncatus** n. sp.
- Not as above. Middle femur strongly arched ventrally beyond middle.....23
- 23(22). Enlarged apex of middle femur with a preapical spine-like process on anterior margin. Basal projection of middle tibia rounded, densely bristled on upper surface.....**crinitibia** Van Duzee.
- Enlarged apex of middle femur without spine-like process. Basal projection of middle tibia slender, almost truncate.....**sinuatus** Van Duzee.
- 24(21). Middle basitarsus with two erect ventral bristles.....
.....**bellulus** Van Duzee.
- Middle basitarsus without ventral bristles.....25
- 25(24). Front tibia with long, fine hairs extending the entire length of ventral surface. Hind femur with one or two stout, black, ventral bristles near middle.....

-**terracolus** Hardy and Kohn.
 Not as above26
- 26(25). Middle basitarsus with long anterodorsal cilia extending the entire length of segment. Middle femur with ventral bristles only on apical third. Hind femur with three black posteroventral bristles near base.**silvaticus** Hardy and Kohn.
 Middle basitarsus without long cilia. Ventral bristles on middle femur extending to about basal third of segment. No ventral bristles on hind femur.27
- 27(26). Middle tibia with numerous long, curved bristles on anterodorsal surface at apical third; middle tibia long, slender, strongly curved, and about three times longer than the basitarsus.**hygrophilus** Hardy and Kohn.
 Middle tibia with long hairs not extending over apical third of segment; tibia not so elongate and about two times longer than basitarsus.28
- 28(27). Posteroventral bristles of middle femur arranged at middle of segment and extending to apical fourth; middle femur with a small rounded preapical projection on anteroventral surface just opposite the projection at base of tibia.**dicondylus** Hardy and Kohn.
 Posteroventral bristles of middle femur arranged at basal third; no such projection at apex of femur.**amblytylus** Hardy and Kohn.
- 29(7). Hind femur with one strong anteroventral bristle situated at apical one-third to two-fifths of segment, the bristle about one-half as long as the femur.30
 Hind femur usually without an anteroventral bristle (if femur has a moderately strong anteroventral bristle, it is situated at the apical one-fifth of the segment and is about one-fifth as long as the femur).31
- 30(29). Middle tibia terminating in one long, slender bristle which extends to apex of tarsus. Second segment of middle tarsus developed into a spine-like projection at base. Last segment of front tarsus white.**albitarsus** Hardy and Kohn.
 Middle tibia with two apical bristles which extend just slightly beyond end of basitarsus. Second tarsal segment with a slight bump near base. Front tarsus dark colored.**uniseta** Hardy and Kohn.

- 31(29). Second segment of middle tarsus developed into a pointed projection near base. Middle tibia with one or two very long hairs at apex, the hairs equal to at least three segments of the tarsus.....32
 Not as above.....33
- 32(31). Middle tibia with two long, apical, hair-like bristles, the longest extending to about apex of third tarsal segment. First segment of middle tarsus shorter than second and produced into a blunt point at apex....
**chauliopodus** Hardy and Kohn.
 Middle tibia with one very long apical hair which extends to apex of tarsus. First tarsal segment longer than second and not produced at apex.....
**impariseta** Hardy and Kohn.
- 33(31). Middle basitarsus usually distinctly shorter than second tarsal segment, or, if subequal, terminating in an apical spur34
 Middle basitarsus distinctly longer than, or subequal to, second tarsal segment; never with an apical spur67
- 34(33). Middle basitarsus flat and lobate at apex..... 35
 Middle basitarsus without a flat apical lobe.....36
- 35(34). Middle tibia twisted, enlarged and flattened on apical two-fifths. Apical half of middle femur covered with fine hairs on dorsum.....**distortipes** Grimshaw.
 Middle tibia enlarged near apex but not twisted. Apex of middle femur without fine dorsal hairs.....
**membranilobus** Parent.
- 36(34). Middle basitarsus without an apical spur and not produced at apex.....37
 Middle basitarsus with a well-developed, black apical spur, or with the apex produced beyond the base of the second tarsal segment.....39
- 37(36). Front and middle femur with fine white hairs on at least the basal half of the anteroventral surfaces. Front tarsomeres ventrally with dense white pile. Middle tibia with a transverse row of five to six long apical bristles (fig. 1c).....**albicomus** n. sp.
 Not as above.....38
- 38(37). Five pairs of dorsocentral bristles present. Legs entirely

- dark colored. All femora with either bristles or long hairs on ventral surfaces. Middle tibia with a row of truncate ventral bristles on basal half and without a ventral projection on apical third.....
.....**nigricollis** Van Duzee.
- Three pairs of dorsocentral bristles present. Femora yellow. Distinct ventral bristles present only on middle femur. Middle tibia lacking truncate ventral bristles, but with a small ventral projection on apical third and with very long anteroventral cilia near apex.....**longitibia** Hardy and Kohn.
- 39(36). Middle basitarsus about equal to or distinctly longer than second tarsal segment.....40
Middle basitarsus distinctly shorter than second segment as measured to point of insertion of second tarsal segment42
- 40(39). Middle tibia strongly flattened dorsally and somewhat twisted. Apical spur of middle basitarsus at least one-half as long as basitarsus.....41
Middle tibia straight, not flattened. Spur of middle basitarsus only about one-fifth as long as basitarsus. One anterodorsal bristle on middle tibia near apical one-fifth.....**inermipes** Malloch.
- 41(40). Front femur with a peculiar round swelling on anteroventral surface near middle. Middle tibia lacking long cilia along posterodorsal margin but with a dense cluster of black bristles near middle and another small cluster at basal third on this surface. Spur of middle tibia short and stout, about one-half as long as basitarsus.....
.....**camptoplax** Hardy and Kohn.
Front femur without such a swelling. Middle tibia lacking clusters of black bristles on posterodorsal surface but with long cilia covering the entire length of segment on this surface. Spur slender, about as long as basitarsus.....**profusus** Hardy and Kohn.
- 42(39). Arista capitate. Second tarsal segment of middle leg elongate, one-half as long as the tibia and covered with long fine cilia.....**patellifer** Grimshaw.
Arista not capitate. Second tarsal segment of middle leg not so elongate.....43
- 43(42). Front coxa with a large, black apical bristle or spine....44
Front coxa without a large apical bristle or spine.....45

- 44(43). Front femur thickly bristled below on basal half. Middle basitarsus short, slightly less than one-fourth as long as next tarsomere, excluding the apical spur . . .
 **spinicoxa** Hardy and Kohn.
 Front femur bare below, except for one or two small bristles at apex. Middle basitarsus almost one-half as long as second segment **perplexus** Hardy and Kohn.
- 45(43). Second and third tarsal segments of front legs flattened and broad. Middle femur without distinctive bristles on venter. Middle tibia straight. Middle basitarsus one-fifth as long as the following tarsomere
 **plautinus** Adachi.
 Second and third segments of front tarsi not flattened. Middle legs not as above 46
- 46(45). Middle femur thick and sharply angulate at base, widest part equal to one-third the length of the segment. Middle trochanter with two blunt, heavy bristles **brevipes** Van Duzee.
 Middle femur not sharply angulate at base. Middle trochanter without large, blunt bristles 47
- 47(46). Middle tibia greatly thickened, widest at apical one-third or one-fourth; at this point a projection is developed on the anterior surface 48
 Middle tibia may be greatly thickened but is without a projection on apical third 49
- 48(47). Large, robust, dark-colored species (2.6 mm. in length), with a pair of stout spines on the projection of the middle tibia. Middle basitarsus flattened dorsoventrally. Third antennal segment triangular, rounded at apex, about as long as wide
 **miritibialis** Van Duzee.
 Smaller species (1.5 mm. in length). Projection of middle tibia covered with numerous short bristles. Third antennal segment conical, acutely pointed at apex, and twice as long as wide **ridiculus** Parent.
- 49(47). Front femur with a cluster of long ventral bristles near base. Middle femur without ventral bristles 50
 Front femur without such a cluster of ventral bristles. Middle femur usually with ventral ciliation 51
- 50(49). Middle tibia with three clusters of long bristles on the dorsal surface, one on the basal one-fifth of the seg-

- ment, the second on the basal two-fifths, and the third on the apical two-fifths; also with a large posterodorsal bristle on the apical one-third of the segment just below the apical cluster of long bristles. Middle basitarsus, excluding the apical spur, about four-fifths as long as the second tarsomere.
 **penicillatus** Parent.
- Middle tibia with only a small cluster of bristles at basal third, and with two or three long hair-like bristles situated near the strongly bent posterodorsal bristle; posterodorsal bristle situated below the middle of the segment. Middle basitarsus about two-thirds as long as the second tarsomere.
 **goniochaeta** Hardy and Kohn.
- 51(49). Mesonotum with three pairs of dorsocentrals and no acrostichal bristles. Middle tibia with two dorsal bristles, one basal and one median; also one anterior bristle on apical one-sixth. **nigroanalis** Parent.
- Mesonotum with four or five pairs of dorsocentrals; acrostichals present. Middle tibia not as above. 52
- 52(51). With five pairs of long dorsocentral bristles. Middle tibia straight, with two dorsal bristles and with a row of erect, blunt ventral bristles on basal two-thirds. All femora with ventral ciliation. **obscurus** Parent.
- With four pairs of long dorsocentral bristles. 53
- 53(52). Middle tibia flattened either dorsoventrally or antero-posteriorly 54
- Middle tibia not noticeably flattened. 61
- 54(53). Middle tibia flattened dorsoventrally 55
- Middle tibia flattened anteroposteriorly. 60
- 55(54). Third tarsomere of front legs slender, about two times longer than second tarsomere. 56
- Third tarsomere about equal in length to second. 57
- 56(55). Middle legs with second tarsomere inserted at about middle of first (first tarsomere extended half its length beyond insertion of second). Spur of middle basitarsus at right angle to that segment, blunt, slightly enlarged at apex. Middle tibia not densely villose and front basitarsus not extended at apex.
 **capitulatus** Hardy and Kohn.
- Middle legs with second tarsomere inserted near apex

- of first, spur straight, sharp pointed. Middle tibia densely covered with long villi along posterodorsal and at least on basal half of anterodorsal surface. Front basitarsus extended into a small point, bearing two setae at its apex.....**planitibia** Parent.
- 57(55). Middle tibia rather slender and arcuate, at least one-third longer than middle tarsi. Middle basitarsus short and straight, about one-half as long as second tarsomere58
 Middle tibia straight, rather thick and shortened, about equal in length to tarsi. Middle basitarsus curved, two-thirds to four-fifths as long as second tarsomere....59
- 58(57). Middle tibia strongly arcuate and flattened, about as wide as femur; entire surface of tibia thickly covered with recumbent hairs, and with a cluster of densely placed, stout, peg-like setae and a strong bristle on dorsal surface near apex. Spur of middle basitarsus heavy, flat, and rounded at apex.....
**petalcnemus** Hardy and Kohn.
 Middle tibia gently arcuate and not strongly flattened, little more than one-half as wide as femur; dorsal surface with short inconspicuous hairs in median part only on basal one-half and no cluster of peg-like setae. Spur of middle basitarsus fine, sharp-pointed, bristle-like.....**mucronatus** Hardy and Kohn.
- 59(57). Middle basitarsus extended at apex beyond base of second tarsal segment, no distinct spur but with one or two bristles at apex. A row of strong posterodorsal bristles extending over entire length of middle tibia.....**calcaritarsus** Adachi.
 Middle basitarsus not extended and with a large black spur at apex. No strong bristles on posterodorsal surface of middle tibia.....
**pycnochaeta** Hardy and Kohn.
- 60(54). Middle tibia completely twisted, dorsal margin lined with long setae, longer than tibia and sinuous at apices. Third tarsomere of front legs equal to second. Middle femur without well-developed posteroventral bristles.....**crassipes** Hardy and Kohn.
 Middle tibia not as above. Third tarsomere of front legs one-third longer than second. Middle femur with well-developed posteroventral bristles.....
**compressus** Hardy and Kohn.

- 61(53). Middle basitarsus extending apically about its own length before spur; apical spur straight and elongate, about three-fourths as long as the basitarsus, including the extended portion.....**vafellus** Parent.
Middle basitarsus not extended apically before spur.....62
- 62(61). Middle tibia rather strongly thickened, with a large, dense anterodorsal cluster of short setae on apical third. Middle basitarsus reduced to a small knob, one-fifth or less the length of the second tarsomere. Apical spur large and curved backwards. Third antennal segment tapered, twice as long as wide.....
.....**hoplitipodus** Adachi.
Middle tibia more or less straight, only slightly thickened and not as above. Basitarsus at least one-fourth or more the length of the second tarsomere. Third antennal segment not so sharply tapered.....63
- 63(62). Middle femur with short ventral bristles.....
.....**calcaratus** Grimshaw.
Middle femur with long ventral bristles, some bristles equal to or longer than the width of the femur.....64
- 64(63). Middle basitarsus about one-fourth as long as second tarsomere (measured to insertion of second); spur about equal in length to basitarsus. Middle tibia with a cluster of small black bristles at apical third on anterior surface.....**helvolus** Hardy and Kohn.
Middle basitarsus about one-half or more as long as second tarsomere; spur not over one-half as long as basitarsus. Middle tibia lacking cluster of short bristles on anterior surface.....65
- 65(64). Middle femur with long pale bristly hairs on anterodorsal surface. Middle basitarsus about one-half as long as second tarsomere; spur about one-half as long as basitarsus.....66
Middle femur lacking bristly hairs on anterodorsal surface. Middle basitarsus about as long as second; spur about one-fourth as long as basitarsus.....
.....**mundulus** Hardy and Kohn.
- 66(65). Middle tibia with one large anterodorsal bristle at apical one-fifth, just below the patch of short anterior bristles.....**congregatus** Malloch.
Middle tibia with two well-developed anterodorsal bristles, the larger one situated just above the anterior patch of short setae.....**putillus** Parent.

- 67(33). Mesonotum metallic green.....68
 Mesonotum yellow to brown or black.....70
- 68(67). With three pairs of dorsocentral bristles. Middle tibia
 with blunt posteroventral bristles on basal one-half....69
 With four pairs of dorsocentral bristles. Middle tibia
 without blunt posteroventral bristles on basal one-
 half.....**ornatus** Van Duzee.
- 69(68). Middle basitarsus with long cilia on posterodorsal sur-
 face. Middle tibia lacking a dorsal bristle.....
**viridulus** Hardy and Kohn.
 Middle basitarsus without long cilia and middle tibia
 with a dorsal bristle near apical two-fifths.....
**norops** Hardy and Kohn.
- 70(67). Eyes not contiguous, narrowest part of face about equal
 in width to three to five rows of eye facets. Some or
 all of the tarsomeres usually with short, fine pile on
 ventral surface71
 Eyes contiguous or very narrowly separated on face, at
 most the separation is not more than two eye facets
 wide (in *C. diamphidius* and *C. bicirritus*).....76
- 71(70). Genitalia conspicuous, projecting ventrally. Entire ven-
 tral surface of middle femur and tibia densely
 covered with short peg-like bristles. Posteroventral
 bristles of middle tibia truncate, about as long as
 width of tibia.....**bicoloripes** Parent.
 Not as above. If middle tibia has truncate postero-
 ventral bristles, these are two times longer than
 width of tibia.....72
- 72(71). Middle tibia with slender, truncate posteroventral
 bristles about two times longer than width of tibia....73
 Middle tibia without truncate posteroventral bristles....74
- 73(72). Tarsi densely, finely villose (the villosity is pale yellow
 to white on apical segments and is especially notice-
 able on front tarsi which have the last four tarso-
 meres white beneath). Both middle and hind tibia
 with four anterodorsal bristles. Middle basitarsus
 about one-fifth longer than second tarsomere. Hind
 femur with rather well-developed posteroventral
 setae, some setae three-fifths to two-thirds as long as
 width of femur. Pulvillus large, equal in length to
 tarsal claws.....**tibialis** Van Duzee.

- Tarsi covered with short black setae below but not villose. Middle and hind tibia with only three anterodorsal bristles. Middle basitarsus one-third longer than second tarsomere. Hind femur with weak posteroventral setae, about one-third the width of the segment. Pulvillus shorter than claws.....
.....**truncatus** Hardy and Kohn.
- 74(72). Legs almost entirely yellow. Middle tibia with rows of long, hooked hairs down the anteroventral and anterior surfaces. Middle basitarsus with a row of long anterior cilia and with a large hair-like bristle at apex.....**coniculus** Hardy and Kohn.
Legs predominantly dark colored. Tibia and tarsus lacking long cilia and middle basitarsus lacking an apical bristle75
- 75(74). One dorsal bristle near middle of front tibia. Middle tibia with a slight bump-like projection developed on anteroventral surface near base and with a row of rather well-developed anteroventral bristles extending its entire length. One anterior bristle before apex of hind femur.....**ephydrus** Hardy and Kohn.
Two dorsal bristles near middle of front tibia. Middle tibia lacking such a projection, only four distinct bristles scattered over anterodorsal surface. Middle femur with inconspicuous ventral setae. Two anterior bristles situated before apex of hind femur...
.....**labilis** Hardy and Kohn.
- 76(70). Some or all of middle tarsi with fine cilia.....77
Middle tarsi without fine cilia.....95
- 77(76). Fine cilia on middle basitarsus only.....78
Fine cilia extending over at least the basal two tarsomeres.82
- 78(77). Middle tibia distinctly curved on basal third, with five or six long, truncate posteroventral bristles on basal third.....**restrictus** Hardy and Kohn.
Middle tibia straight or but slightly curved just below middle, with no truncate ventral bristles.....79
- 79(78). Middle basitarsus short, about one-fourth as long as tibia. Middle tibia slightly curved below the middle, with three diagonal rows of bristles which run from the anterior surface over onto the dorsal surface
.....**loxothrix** Hardy and Kohn.

- Middle basitarsus about one-half the length of the tibia. Middle tibia without diagonal rows of bristles. . . . 80
- 80(79). No acrostichal bristles. Front tibia with two posterior bristles but no dorsal bristle near middle. Third antennal segment rounded at apex, as wide as long. No cilia on anteroventral surface of middle tibia. . . .
 **cracens** Hardy and Kohn.
 Acrostichal bristles present. Front tibia with a dorsal bristle near middle. Third antennal segment pointed, longer than wide. At least one long hair on anteroventral surface of middle tibia. 81
- 81(80). Anteroventral surface of middle tibia with one long curved hair at apical one-fourth. Middle femur with ventral bristles extending to near apex. Basitarsus ciliated on posterior surface.
 **eximius** Hardy and Kohn.
 Anteroventral surface of middle tibia with two long, hooked cilia near middle (fig. 1g). Middle femur with ventral bristles to about middle of segment. Basitarsus ciliated on anterodorsal surface (fig. 1h)
 **bicirritus** n. sp.
- 82(77). Middle tibia sinuously curved. Middle femur strongly thickened, sharply attenuated at apex with a cluster of ventral bristles at apex of thickened portion. Three pairs of dorsocentral bristles present.
 **flexuosus** Parent.
 Middle tibia and femur not as above. Four to five pairs of dorsocentral bristles present. 83
- 83(82). Five pairs of dorsocentral bristles present. 84
 Four pairs of dorsocentral bristles present. 85
- 84(83). Middle tibia straight, not swollen, covered with long cilia on both dorsal and ventral surfaces, the longest setae in the anteroventral series. Acrostichals uniserial. Wings with fumose markings.
 **fumipennis** Parent.
 Middle tibia slightly swollen, depressed, with one anterodorsal bristle on basal one-fourth and a row of long anterior bristles on apical one-half. Acrostichals irregularly biserial. Wings without fumose markings
 **ciliatus** Van Duzee.
- 85(83). Middle femur concave near median part, as seen from dorsal view, with long anterior setae on apical third,

- and shorter dorsal and anterior setae near apex 86
- Middle femur not concave as above, or if concave (*C. expansus*), then femur without long anterior setae on apical third 88
- 86(85). Middle tibia with a cluster of long dorsal bristles and hairs near basal third, apex without long anterior hairs. Cilia on middle basitarsus not longer than width of tarsus **scolimerus** Hardy and Kohn.
- Middle tibia with short setae on basal third, apex with well-developed anterior hairs. Cilia on middle basitarsus distinctly longer than width of tarsus 87
- 87(86). Middle tibia with well-developed antero- and postero-dorsal rows of hooked setae on apical three-fourths **brevitibia** Hardy and Kohn.
- Middle tibia with, at most, a few antero- and postero-dorsal bristles near apex **diffusus** Hardy and Kohn.
- 88(85). Front tarsus with third tarsomere distinctly longer than second 89
- Front tarsus with third tarsomere equal to or slightly shorter than second 90
- 89(88). Middle tibia with one anterodorsal bristle near base but with no long cilia on anterodorsal surface
- **rectus** Malloch.
- Middle tibia without a basal anterodorsal bristle but with dense ciliation on anterodorsal surface, especially at base **longiciliatus** Parent.
- 90(88). Middle tibia with a row of blunt posteroventral bristles near base, at least some of the bristles about as long as the width of the tibia 91
- Middle tibia not as above 93
- 91(90). Apical three-fifths of middle tibia with numerous long cilia on anterior and anterodorsal surfaces
- **clinotibia** Hardy and Kohn.
- Not as above 92
- 92(91). Middle tibia with a strong anterior bristle on apical one-third. Middle basitarsus three-fifths as long as tibia **brunnescens** Hardy and Kohn.
- Middle tibia with a small anterior bristle near middle. Middle basitarsus one-half as long as tibia
- **fulvifacies** Hardy and Kohn.
- 93(90). Middle tibia with long cilia on anteroventral surfaces.

- Middle femur with long anterior bristles developed. . . . 94
 Middle tibia without long cilia on anteroventral surfaces but with anterodorsal cilia developed. No long anterior bristles on middle femur. Middle femur with a row of bristles on posteroventral surface extending from basal one-fourth to apical one-third. . . .
 **tarsiciliatus** Parent.
- 94(93). Middle tibia in dorsal view straight on apical two-thirds, slightly expanded near base on anterodorsal surface, the ventral surface of the expansion lined with small, stout bristles (fig. 2d). Middle femur with a closely spaced ventral cluster of short bristles at apical one-third and an anteroventral comb-like row of short bristles extending from apical one-third to apex. **expansus** n. sp.
 Middle tibia curved below middle in dorsal view (fig. 2f). Middle femur not as above, but with an anteroventral row of strong bristles extending from basal one-fourth to apical one-fourth (fig. 2e). **hardyi** n. sp.
- 95(76). Anterior margin of middle tibia slightly sinuate, biconvex, with two clusters of bristles on the convex parts; the lower cluster is larger and the bristles are better developed. **bicrenatus** Hardy and Kohn.
 Anterior margin of middle tibia not biconvexly sinuate. . 96
- 96(95). Bristles or long hairs on middle tibia restricted to a cluster on basal third of segment. 97
 Bristles of middle tibia, if in a cluster, not restricted to basal third; bristles usually arranged differently. . . 103
- 97(96). Middle tibia with a distinct basal swelling, the swollen section covered with a cluster of setae. 98
 Middle tibia not noticeably swollen. 99
- 98(97). Body dark brown. Middle femur with posterior bristles on apical fourth. Setae on swelling of middle tibia heavy, not hair-like.
 **fusticulus** Hardy and Kohn.
 Body predominantly yellow. Middle femur without posterior bristles on apical fourth. Setae on swelling of middle tibia fine and hair-like. **fragilis** Parent.
- 99(97). Hind tibia with three anterodorsal bristles before apex.
 A cluster of hairs on basal third of middle tibia consisting of fine, yellow-brown, hooked setae, the long

- hairs concentrated on the posterior and anterodorsal surfaces and the short hairs arranged between them. 101
- Hind tibia with only two anterodorsal bristles before apex. The cluster of hairs on middle tibia thicker and evenly distributed over the dorsal surfaces, or with a row of long hairs on dorsal surface. 100
- 100(99). Cluster of setae on middle tibia consisting of very short, slightly thickened setae evenly distributed over the dorsal surfaces. The two anterodorsal bristles on the hind tibia far apart, one at basal fourth, the other beyond middle. **biseta** Hardy and Kohn.
- Cluster of setae on middle tibia with a row of long setae on dorsal surface, some setae more than twice as long as the width of the tibia (fig. 3i); a few rows of shorter setae anteriorly. The two anterodorsal bristles on hind tibia close together at basal one-third. **finitimus** n. sp.
- 101(99). Hind femur with distinct bristles or erect hairs along anteroventral surface 102
- Hind femur without bristles or bristle-like hairs on anteroventral surface. **paniculatus** Hardy and Kohn.
- 102(101). Anteroventral surface of hind femur with moderately developed black bristles; some are equal in length to more than one-half to three-fourths the width of the femur. Posteroventral surface of middle femur with eight strong bristles extending from basal sixth to apical third of segment and with a continuous row of short anteroventral bristles extending almost to base of segment. **setiger** Hardy and Kohn.
- Anteroventral surface of hind femur with erect, yellow-brown hairs, their length equal to less than half the width of the femur. Posteroventral surface of middle femur with five to six strong bristles extending from about basal sixth to middle, and with a row of short anteroventral bristles extending to about apical two-fifths. **modicus** Hardy and Kohn.
- 103(96). Middle tibia with a median cluster of bristles on the dorsal surface. **mediofloccus** Hardy and Kohn.
- Middle tibia without a median cluster of bristles. 104
- 104(103). Middle tibia with a row of closely placed anterior bristles extending from about basal sixth to apical

- two-fifths of segment.....**macula** Parent.
Middle tibia lacking such a row of bristles.....105
- 105(104). Middle tibia with a row of blunt bristles on the postero-
ventral surface near base.....106
Middle tibia without such blunt bristles.....109
- 106(105). Hind tibia with long, fine setae on entire ventral sur-
face.....**crossotibia** Hardy and Kohn.
Hind tibia without long ventral setae.....107
- 107(106). Middle tibia flexed, with blunt posteroventral bristles
on basal fourth and long anterior bristles on median
part. Middle femur strongly constricted near apex,
distinct ventral bristles near apex only.....
.....**rhypopus** Hardy and Kohn.
Middle tibia more or less straight, with blunt postero-
ventral bristles on about the basal half and no
long anterior bristles on median part. Middle femur
slightly constricted near apex, with well-developed
ventral bristles on about basal half of segment.....108
- 108(107). Middle tibia straight, posteroventral bristles short,
about equal to width of tibia; a strong anterodorsal
and a strong dorsal bristle near basal third of seg-
ment.....**miser** Parent.
Middle tibia slightly bent at basal third, posteroventral
bristles nearly two times longer than width of seg-
ment and without strong dorsal bristles.....
.....**flavipes** Hardy and Kohn.
- 109(105). Front tibia with at least one dorsal bristle.....110
Front tibia without a distinct dorsal bristle.....117
- 110(109). Middle tibia lacking long cilia.....111
Middle tibia ornate, with a number of long curved hairs.....114
- 111(110). Front tarsus with long cilia extending along posterior
surface. Anteroventral surface of middle femur with
two long bristles on basal fourth of segment and
with a row of short bristles on apical half; anterior
surface of middle femur with numerous erect bristles
in the middle.....**drymoscartes** Hardy and Kohn.
Front tarsus not ciliated. Middle femur not as above....112
- 112(111). Middle femur with well-developed ventral bristles.
Thorax partly yellow, mesonotum with brown vit-
tae. Bases of halteres and antennae yellow.....113

- Middle femur lacking ventral bristles, with only fine hairs below. Thorax, halteres, and antennae entirely brown to black.....**simplicipes** Parent.
- 113(112). Eyes separated on the face by a width equal to two rows of eye facets. Abdomen all black. Middle basitarsus less than one-fourth as long as tibia.....**diamphidius** Hardy and Kohn.
 Eyes nearly contiguous on face, separated by less than the width of one eye facet. Sides of abdominal terga and all of venter yellow. Middle basitarsus about two-fifths as long as tibia...**flaviventer** Hardy and Kohn.
- 114(110). Middle femur greatly curved on anterior margin and with a dorsal brush of fine hairs on apex.....**fimbriatus** Grimshaw.
 Middle femur normal, without a dorsal brush at apex...115
- 115(114). Hind margin of wing undulated, with an indentation at apex of vein M_{3+4} . Middle tibia with a strong anterior bristle situated at apical third. Middle femur lacking long hairs on anterior surface.....**undulatus** Hardy and Kohn.
 Not as above. Middle femur with long anterior hairs on median section.....116
- 116(115). Thorax predominantly yellow. Antennae yellow. Middle femur with long, erect, anterior bristles on median section. Middle tibia with short ventral setae and with long dorsal setae on basal three-fifths.....**acuticornis** Parent.
 Thorax dark brown to black. Antennae black. Middle femur with a comb-like series of long, fine, reclinate hairs on the anterior surface. Middle tibia with long ventral setae on basal third and with a series of long anterodorsal setae on apical four-fifths.....**pherocteis** Hardy and Kohn.
- 117(109). Middle tibia with at least one anterodorsal and usually one dorsal bristle present on basal two-fifths.....118
 Middle tibia with no strong anterodorsal or dorsal bristles on basal one-half.....122
- 118(117). With three pairs of dorsocentral bristles. If a dorsal bristle is present on middle tibia, it is well separated from the anterodorsal and is situated at about the basal two-fifths of the segment; no long hairs present on anterior surface of tibia.....119

- With four pairs of dorsocentral bristles. Middle tibia with a dorsal bristle situated near anterodorsal bristle at basal one-third of segment and with three anterior bristle-like hairs at apical third.....
**depauperatus** Parent.
- 119(118). Middle tibia with a dorsal bristle on basal two-fifths.
 Halteres and femora yellow.....121
 Middle tibia without a dorsal bristle.....120
- 120(119). Middle femur with about nine moderately developed, black anteroventral bristles extending from near base to apical third. Posteroventral surface of middle tibia with very short, erect black bristles extending over basal three-fourths. Front tibia carinated on dorsal surface. Halteres yellow.....
**carinatus** Hardy and Kohn.
 Middle femur with only two pale ventral bristles.
 Middle tibia without posteroventral bristles. Front tibia not carinate. Knobs of halteres brown.....
**olympicolus** Parent.
- 121(119). Middle femur with about five yellowish hair-like bristles at middle of segment on lower anterior surface. Anterodorsal bristle situated much nearer dorsal bristle than to base of segment. No ventral bristles on middle tibia. Hind tibia with only one distinct dorsal bristle in addition to three anterodorsals**deficiens** Parent.
 Middle femur with two moderately strong black bristles on lower anterior surface at apical two-fifths of segment; anterodorsal bristle closer to base of segment than to the dorsal bristle. Two short ventral bristles on middle tibia (one at middle, one at apical fourth) and four dorsal bristles on hind tibia (three between basal two-fifths and apical one-third).....
**indecorus** Hardy and Kohn.
- 122(117). Middle tibia with a continuous row of strong black anterodorsal bristles extending from basal one-fourth to apical one-fourth. Three pairs of dorsocentral bristles present.....**distinctus** Hardy and Kohn.
 Middle tibia with not more than a short row of black anterodorsal bristles near basal fourth, usually with only fine cilia on anterodorsal surface. Four pairs of dorsocentral bristles present.....123

- 123(122). Middle tibia at least slightly curved and with a short row of black anterodorsal bristles at basal fourth; no conspicuous cilia on anterodorsal or dorsal surfaces. . . 124
 Middle tibia straight, lacking black anterodorsal bristles, although there may be long cilia on this surface. . 125
- 124(123). Middle tibia strongly curved, two well-developed anterior bristles present on apical fourth of segment and one strong, curved anteroventral bristle near middle; no long, hooked cilia on anteroventral surface. **disjunctus** Hardy and Kohn.
 Middle tibia gently curved, no anterior bristles; anteroventral surface with one strong black bristle near apex and eight long, pale, hooked cilia between apical fourth and middle of segment.
 **exiguus** Hardy and Kohn.
- 125(123). Middle tibia with fine cilia along the dorsal margin or with anterodorsal cilia only on apical one-fourth. No cilia along entire anterodorsal margin. 126
 Middle tibia with fine cilia along the entire anterodorsal margin 127
- 126(125). Middle tibia with long cilia along entire dorsal surface; a row of long cilia also on basal one-half of anteroventral surface and long, wavy cilia on anterior surface of basal one-fifth (fig. li-j). **crispatus** n. sp.
 Middle tibia with anterodorsal ciliation on apical one-fourth; three or four long hairs on posterodorsal margin at apical one-fourth.
 **crossotus** Hardy and Kohn.
- 127(125). Middle tibia with a well-developed dorsal bristle on apical third. **breviciliatus** Parent.
 Middle tibia without dorsal bristle on apical third, or, if a dorsal bristle is present, it is apical in position. . . 128
- 128(127). Ventral surface of middle tibia with only short, erect setae 129
 Ventral surface of middle tibia with four to five long, fine setae on basal two-fifths. . . **sciarus** Hardy and Kohn.
- 129(128). Anterodorsal cilia on middle tibia sparse and irregularly spaced. **inaequalis** Hardy and Kohn.
 Anterodorsal cilia of middle tibia evenly spaced and in a definite arrangement. 130

- 130(129). Front shiny, metallic green. Middle tibia with a row of fine cilia on basal one-third of posterior surface....
 **furax** Parent.
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- 131(130). Middle tibia with long, closely placed posterodorsal cilia extending the entire length of the segment; these hairs are nearly two times longer than those on anterodorsal surface; entire dorsal surface of tibia densely haired.....**comatus** Hardy and Kohn.
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 Anterodorsal ciliation of middle tibia dense and closely set, made up of two rows of setae, the more anterior row being three-fourths the length of the row behind it.....**hispidipes** Hardy and Kohn.

DESCRIPTIONS OF NEW SPECIES OF *CAMPSICNEMUS**Campsicnemus albicomus* Tenorio, new species (fig. 1a-c).

Belonging to the group with basitarsi shorter than the second tarsomere but without an apical spur on the basitarsi. It is differentiated from other species by the fine white pile covering the ventral surfaces of the front and middle femora, the sinuous middle femora, and the chaetotaxy of the middle tibiae.

MALE. Head: Eyes contiguous, lower part of face brown pollinose. Front and vertex brown to bronze pollinose with slight metallic blue-green sheen. Antennae yellow, third segment about one-fourth longer than wide, edged with brown and relatively rounded at tip. **Thorax:** Dorsum bronze pollinose, with four pairs of well-developed dorsocentral bristles and one row of acrostichals. Upper part of pleura brown dusted with grey pollen, lower part yellow with grey pollen. Halteres yellow. **Legs:** Front coxae whitish yellow, middle and hind coxae yellow-brown. Front trochanters brown, middle and hind yellow. Front legs predominantly brown, middle and hind femora yellow, tibiae and tarsi brown. Anteroven-tral surface of basal two-thirds of front femora covered with very fine short white hairs; a row of rather strong black bristles also on apical one-third of posteroventral surface of femur (fig. 1a). Front tibia with one long dorsal bristle at middle which is about equal to one-third the length of the tibia. Front tarsomeres covered ventrally with dense white pile. Middle femur sinuous on apical one-half, as seen from dorsal view; basal one-half of anteroventral surface covered with very fine white hairs, longer and more dense at basal one-fourth; a cluster of long apically curved bristles on dorsal and anterodorsal surfaces near apex (fig. 1b). Middle tibia (fig. 1c) rather flattened dorsoventrally, covered anteriorly with long, fine, curved bristles; ventral surface with shorter pile-like hairs; posteroventral surface with longer curved hairs medially; one long posteroventral bristle below middle and a ventral transverse row of five to six apical bristles, gradually increasing in stoutness and length posteriorly. Hind legs without conspicuous bristles. **Wings:** Faintly brown fumose. Fourth costal section about one-third longer than fifth. Last section of M_{3+4} almost two and one-half times longer than the m crossvein. **Abdomen:** Black, with purple tinge in direct light.

Length: body, 3.0 mm.; wings, 3.6 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7834) and two paratype males: Auwahi, Maui, June 17, 1965 (J. Fujii, D. E. Hardy). Paratypes in the University of Hawaii collection.

Campsicnemus aurilobus Tenorio, new species (fig. 1d-f).

Fitting into the group having a projection near the base of each middle tibia, the middle tibiae swollen or sinuate, and the middle basitarsi longer than the tibiae. Apparently related to *C. contortus* Parent but differing in the shape of the subbasal projection on the middle tibia, the presence of anteroventral bristles

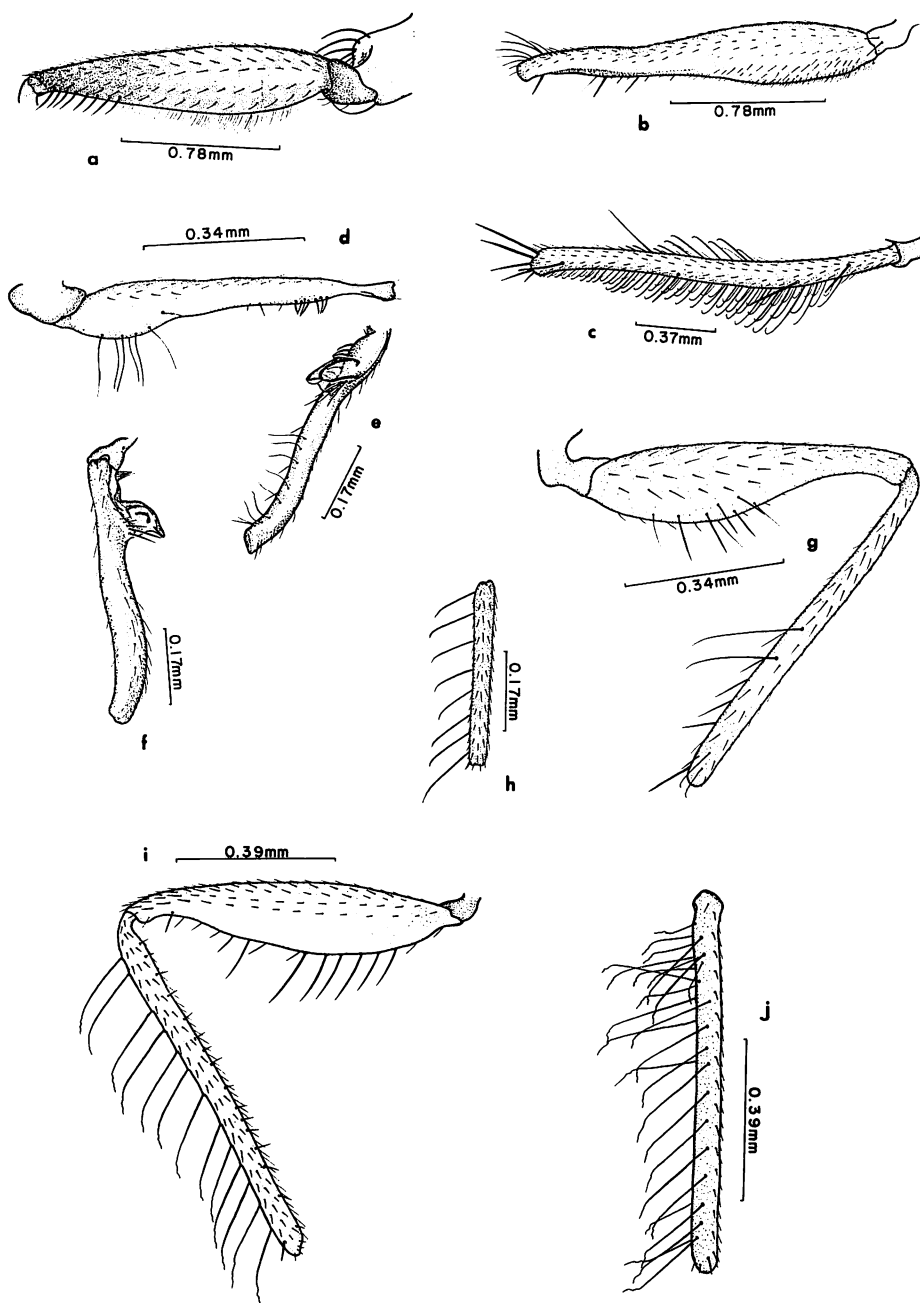


Figure 1—*Campsicnemus albicomus*, n. sp.: a, front femur, posterior view; b, middle femur, anterior view; c, middle tibia, dorsal view. *C. aurilobus*, n. sp.: d, middle femur, anterior view; e, middle tibia, anterior view; f, middle tibia, anterodorsal view. *C. bicirritus*, n. sp.: g, middle leg, anterior view; h, middle basitarsus, dorsal view. *C. crispatus*, n. sp.: i, middle leg, posterior view; j, middle tibia, dorsal view.

near the apices of the middle femora, and the lack of short black posterodorsal bristles on apical one-third of middle tibiae.

MALE. Head: Eyes not contiguous, separated by a width equal to four to five rows of eye facets. Lower face white to yellow pubescent, upper face yellow to yellow-brown. Front and vertex metallic purple dusted with brown pollen. First two antennal segments brown, third segment black and pointed, about two times longer than wide. Basal one-half of arista dark brown, apical one-half white. **Thorax:** Mesonotum dark brown, densely brown pollinose. Pleura usually brown, lower part yellow-brown. With four pairs of dorsocentral bristles and one row of acrostichals. Halteres brown on knobs, tinged with yellow on stems. **Legs:** Front coxae and all femora yellow to yellow-brown; other coxae, tibiae, and tarsi entirely brown. Front femora without any conspicuous hairs or bristles; front tibiae with no distinct bristles. Middle femora rather swollen at basal one-third, apically attenuated and dorsoventrally flattened; anteroventral surface of the swollen part sparsely covered with a group of fine long hairs or bristles; a row of closely-spaced, short, rather fine anteroventral bristles at apical one-third just before the attenuated section (fig. 1d). Middle tibiae slightly sinuate, slightly thickened on basal part and past middle (fig. 1e-f); subbasal projection rather broad, ear-like, somewhat twisted at the apex; a group of bristles about as long as the projection just in front of it and an anteroventral row of short bristles just behind it; an anterior row of fine, yellow hairs extends from the middle to the apex of the tibia. Middle basitarsi straight, about one-fifth longer than the tibia. Hind femora each with about one long anterior and one long anteroventral bristle at apical one-third. Hind tibiae each with a distinct row of erect ventral bristles at base extending to apical one-third where they become indistinct, the basal bristles strongest in the row. **Wings:** Hyaline. Fourth costal section one-fourth longer than the fifth. Vein M_{3+4} twice as long as the m crossvein. **Abdomen:** Entirely black, covered with brown pollen.

Length: body, 1.9 mm.; wings, 2.1 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7835), one paratype male: Puu Kolehale, Molokai, July 30, 1959 (D. E. Hardy). One male paratype from Puu Kolehale, Molokai, July 18, 1963 (D. E. Hardy). Paratypes in the University of Hawaii collection.

Campsicnemus bicirritus Tenorio, new species (fig. 1g-h).

Belonging to the group which has the basitarsus longer than the second tarsomere and the eyes very narrowly separated on the face. Close to *C. coniculus* Hardy and Kohn but differing by having only two long hooked hairs on the anterior surface of the middle tibia, in lacking the long hair-like bristle at the apices of the middle basitarsi, by the smaller body size, and by the narrow face.

MALE. Head: Eyes separated on the face by a distance equal to about two rows of eye facets. Face brown pubescent. Front and vertex densely grey pollinose. Antennae brown, third segment a little longer than wide, pointed. **Thorax:** Al-

most entirely brown covered with dense grey pubescence. Humeri tinged with yellow. Five pairs of dorsocentral bristles, the first and fourth pairs weak; two rows of irregularly placed acrostichals. Halteres clear yellow. *Legs*: Entirely yellow except for the brown middle and hind coxae. Front femora without conspicuous bristles; front tibiae each with one dorsal bristle before middle. Middle femur with a row of long slender anteroventral bristles extending from basal one-fifth to past middle (fig. 1g), and short slender hair-like bristles on ventral surface on basal one-half. Middle tibia slightly curved, with two long, slender, hooked, yellow cilia on anteroventral surface near middle, the cilia equal in length to about one-third the length of the tibia (fig. 1g); two shorter hooked cilia near apex; also a row of ventral bristles on apical one-half. Basitarsi about one-half as long as tibia, each with one row of long, widely spaced, hooked cilia extending along the entire anterodorsal surface; the cilia are about two times longer than the width of the basitarsus (fig. 1h). *Wings*: Hyaline. Fourth costal section about one-half longer than the fifth. Last section of M_{3+4} almost three times longer than the m crossvein. *Abdomen*: Entirely black.

Length: body, 1.7 mm.; wings, 2.0 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7836): Punahi, Hawaii, August 1956 (D. E. Hardy).

***Campsicnemus crispatus* Tenorio, new species (fig. li-j).**

This species appears to belong to the group which lacks cilia on the middle tarsi, which has the basitarsi slender, and which has no dorsal bristle on the front tibiae. It differs from others in the group by having the long cilia on the dorsal and anteroventral surfaces rather than on the anterodorsal surface of the middle tibiae.

MALE. *Head*: Eyes contiguous on the face for a distance equal to about four rows of eye facets. Lower face yellow-brown pubescent. Front and vertex olive, densely grey pollinose. Basal two antennal segments yellow, the second segment ringed with brown on apex and the third brown, about as long as wide, relatively rounded at tip. *Thorax*: Entirely dark brown, mesonotum covered with light brown pollen. Four pairs of dorsocentral bristles, the third pair very weak; no acrostichals. Halteres yellow. *Legs*: Predominantly yellow except for middle and hind coxae which are brown. Front legs lacking conspicuous bristles. Middle femora each with a row of long ventral bristles on the basal one-half, followed by one or two isolated bristles distad of middle (fig. 1i); a row of weaker anteroventral bristles extending almost the entire length of the segment. Middle tibia straight, with a row of long cilia on the dorsal surface extending from basal one-fourth to apex, running somewhat anteriorly near apex (fig. 1i), the cilia wavy at tips; two long dorsal cilia near base; a group of closely spaced, long, wavy cilia at basal one-fifth of anterodorsal surface and a row of widely spaced, long wavy cilia on basal one-half of anteroventral surface (fig. 1j); ventral surfaces with short erect bristles along entire length. Hind femur with a row of

short ventral bristles on basal one-half. *Wings*: Hyaline. Third costal section about one-half longer than fourth. Last section of M_{3+4} about two times as long as m crossvein. *Abdomen*: Black.

Length: body, 1.7 mm.; wings, 2.2 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7837) : Maulua Trail, Keanakolu, Hawaii, August 20, 1954 (D. E. Hardy).

***Campsicnemus digitatus* Tenorio, new species (fig. 2a-b).**

A member of the group which has a projection at the base of the middle tibia, the middle tibiae swollen and slightly sinuate, and the middle basitarsus shorter than the tibia. Differing from other species in this group by the thin finger-like projection at base of the middle tibia, the elaborate chaetotaxy of the middle tibiae, and the middle basitarsus equal to less than one-fifth the length of the middle tibia.

MALE. *Head*: Eyes almost contiguous for a distance equal to about four rows of eye facets, at narrowest part less than one eye facet apart. Face whitish grey pubescent; front and vertex shiny purple-green, dotted with brown pollen. Antennae black, third segment about two times longer than wide, pointed at apex. *Thorax*: Dorsum brown pollinose, scutellum distinctly metallic green in ground color. Four pairs of dorsocentral bristles present, no acrostichals. Pleura largely brown, sternopleura and hypopleura yellow. Haltere stems yellow, knobs brown. *Legs*: Front coxae yellow; all femora yellow, tinged with brown apically; all tibiae and tarsi brown to black. Front femora with a row of weakly developed posteroventral bristles, the bristles strongest on the apical half. Middle femora slightly thickened basally, arched ventrally beyond middle; a row of evenly spaced ventral bristles extends from base to just beyond middle, the most basal bristles the strongest (fig. 2a); a row of anterodorsal bristles extends almost the entire length of the segment, the apical bristles minute. Middle tibiae almost twice as long as the femora, rather flattened laterally, slightly sinuous, slightly swollen before middle (fig. 2a); a relatively thin, yellow, finger-like projection near base of tibia, the projection a little shorter than the middle basitarsus (fig. 2b); apical two-thirds of anterodorsal surfaces densely long-haired, the hairs curled at apices; anteroventral surfaces with similar long hairs on apical one-half extending onto the anterior surfaces near apex; entire anterior surface covered with short fine hairs. Basitarsi of middle legs very short, about equal in length to the second tarsomere and less than one-fifth the length of the middle tibia. Hind femora with anteroventral surfaces with a row of fairly well developed, evenly spaced, bristles extending almost the entire length. *Wings*: Almost hyaline. Fourth costal section about twice as long as fifth. Last section of M_{3+4} more than two times longer than m crossvein. *Abdomen*: Dark brown.

Length: body, 1.9 mm.; wings, 2.5 mm.

FEMALE. Similar to the male, but lacking the ornamented legs. Face about

four eye facets wide at narrowest point. Third antennal segment about one-half times longer than wide.

Length: body, 1.9 mm.; wings, 2.5 mm.

Holotype male (Bishop Museum Number 7838), allotype female, and five paratype males: Naalehu, Hawaii, April 23, 1965 (D. E. Hardy); December 19, 1967 (J. A. Tenorio). Paratypes in the University of Hawaii collection.

Campsicnemus expansus Tenorio, new species (fig. 2c-d).

A member of the group of species which has the basal three tarsomeres of the middle legs ciliated and the basitarsi simple. Close to *C. tarsiciliatus* Parent because it lacks blunt posteroventral bristles near the base of middle tibiae and the middle tibiae are nearly straight. Differing in the presence of ventral bristles only on apical parts of middle femora and by having long cilia on the dorsal, anterior, and anterodorsal surfaces of the middle tibiae.

MALE. *Head:* Eyes nearly contiguous for a distance equal to about three rows of eye facets, separated by a distance equal to less than one row of eye facets. Lower face white pubescent, upper face gold pubescent. Front and vertex dark olive, lightly covered with brown pollen. First antennal segment yellow, second and third segments yellow-brown, third segment a little longer than wide and rounded at apex. *Thorax:* Almost entirely reddish brown, yellow-tinged along the lateral margins of the notum. Four pairs of dorsocentral bristles present, no acrostichals. Halteres yellow. *Legs:* Yellow to yellow-brown, except for the brown middle and hind coxae. Front legs with no conspicuous hairs or bristles; front tibiae each with one posterodorsal bristle above middle. Middle femora slightly concave at middle as seen from dorsal view; each with a closely spaced ventral cluster of short black bristles at apical one-third (in the specimen from Lanai, this cluster has additional bristles and the bristles are more widely spaced); an anteroventral comb-like row of short, fine bristles extending from apical one-third to apex (fig. 2c); also a row of long anterior bristles on basal one-half. Middle tibiae straight, slightly expanded near the base on anterodorsal surface, the ventral surface of the expansion lined with tiny stout, teeth-like bristles (fig. 2d); dorsal, anterodorsal, and anteroventral surfaces lined irregularly with long cilia of varying length and thickness; the ventral surface above middle with a row of short bristles. Middle basitarsi less than one-half as long as middle tibia; first three tarsomeres with long cilia extending the entire length of the anterodorsal surfaces, the basitarsi also with cilia on the anterior surface. Hind femur with two or three long anteroventral bristles on apical one-half, the bristles as long as, or longer than, the width of the femur at point of insertion. *Wings:* Hyaline. Fourth costal section about two-thirds longer than the fifth. Last section of M_{3+4} about two times longer than the m crossvein. *Abdomen:* Black.

Length: body, 2.3 mm.; wings, 2.9 mm.

FEMALE. Similar to the male but lacking ornamented legs. Face about one row of eye facets wide at narrowest point. Third antennal segment more rounded than in the male, about as long as wide.

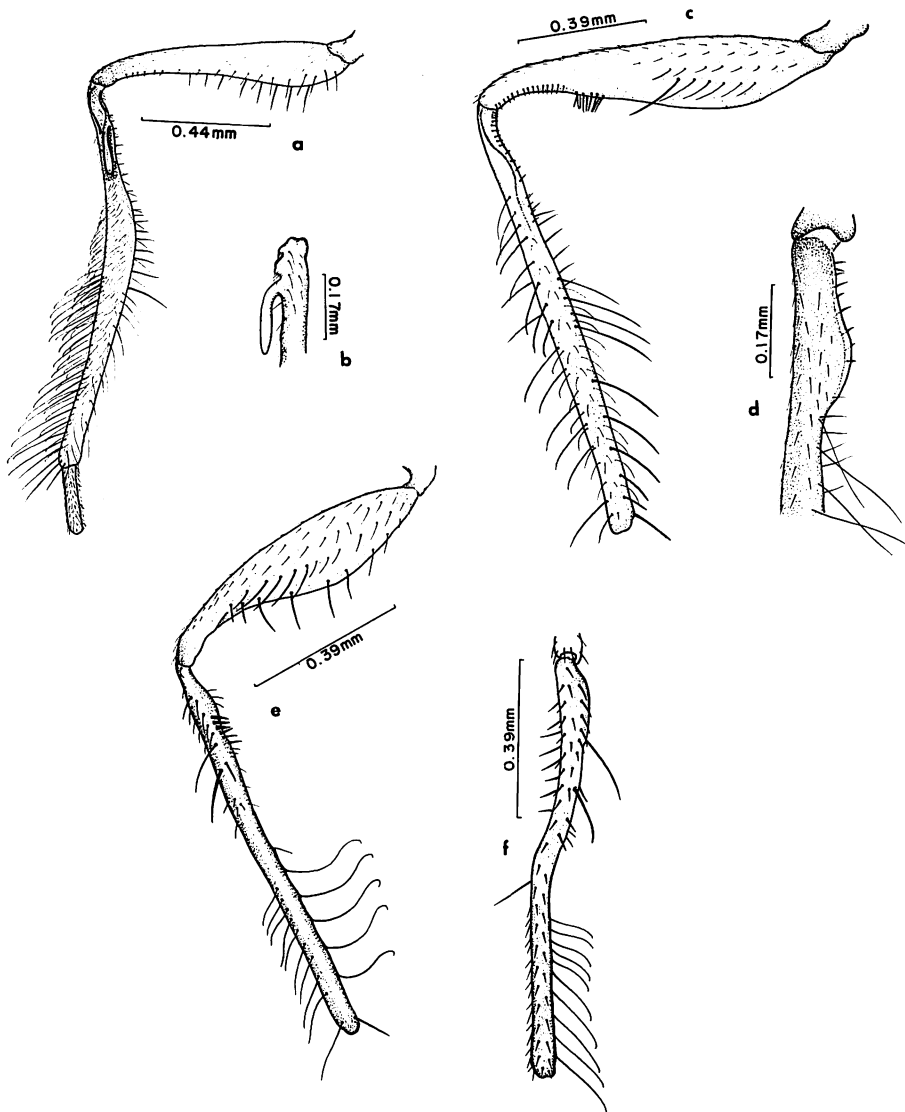


Figure 2—*Campsicnemus digitatus*, n. sp.: a, middle leg, anterior view; b, subbasal projection on middle tibia, dorsal view. *C. expansus*, n. sp.: c, middle leg, anterior view; d, expansion on middle tibia, dorsal view. *C. hardyi*, n. sp.: e, middle leg, anterior view; f, middle tibia, dorsal view.

Length: body, 2.4 mm.; wings, 2.9 mm.

Holotype male (Bishop Museum Number 7839), allotype female, and three paratype males: Pepeopae, Molokai, July 30, 1939 (D. H. Habeck); one paratype male: Puu Kukui Ridge, Maui, August 4, 1964 (D. E. Hardy); one paratype

male: Lanaihale, Lanai, July 1, 1965 (D. E. Hardy). Paratypes in the University of Hawaii collection.

***Campsicnemus finitimus* Tenorio, new species (fig. 3h-i).**

A small species belonging to the group which has the middle tarsi not ciliated and the middle tibiae with a cluster of bristles or hairs at basal third. This species is near *C. biseta* Hardy and Kohn because it has only two anterodorsal bristles on the hind tibiae before the apex. It differs from *C. biseta* in the subbasal cluster of setae on the middle tibiae containing a row of long dorsal bristles, the posteroventral bristles of the middle femora confined to the basal half of the segment, and the position of the anterodorsal bristles on the hind tibiae.

MALE. *Head:* Eyes contiguous on the face. Front and vertex dark brown, dusted with bronze pollen. First two antennal segments yellow, the third brown, about one and one-half times longer than wide, pointed. *Thorax:* Dark brown dusted with brown pollen, faintly metallic green. Four pairs of dorsocentral bristles, the third weak. Halteres brown. *Legs:* Predominantly yellow except for tarsi and the brown dorsum of the front femora. Front legs without conspicuous bristles. Middle femora with a row of three to five posteroventral bristles at about basal one-third extending to middle (fig. 3h); also a row of short anteroventral bristles extending to about apical one-third. Middle tibiae slightly curved basally, with a row of long dorsal bristles on the curved section, some bristles more than twice the width of the tibia (fig. 3i); a few rows of shorter hairs present on anterodorsal part; a row of short anteroventral bristles and sparsely placed posteroventral bristles extending along the entire segment. Hind femora with short anterodorsal bristles on basal one-half. Hind tibiae with two anterodorsal bristles placed close together at basal one-third; one dorsal bristle at middle and a weaker dorsal bristle at apical third. *Abdomen:* Black.

Length: body, 1.7 mm.; wings, 1.9 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7840): Kipuka Ki, Hawaii, December 21, 1966 (K. Y. Kaneshiro).

***Campsicnemus hardyi* Tenorio, new species (fig. 2e-f).**

A member of the group which has the middle basitarsi simple and longer than the second tarsomere and the middle tarsi with fine cilia. Separated from other species in this group by the curved middle tibiae without blunt posteroventral bristles near base, the anteroventral bristling on middle femora extending from basal one-fourth to apical one-fourth, and the chaetotaxy of the middle tibiae.

MALE. *Head:* Eyes contiguous on the face for a distance equal to about seven rows of eye facets. Lower face gold pubescent. Front and vertex dull olive covered with brown pollen. Basal two segments of antennae yellow-brown, third segment brown, twice as long as the base is wide, apices sharply pointed. *Thorax:* Almost entirely yellow to yellow-brown, except for a black spot on the metapleuron extending onto the side of the metanotum and two faint lines of brown extending

down each dorsocentral row. Four pairs of dorsocentrals, one row of acrostichals. Halteres yellow. *Legs*: Front coxae yellow, middle and hind coxae brown; all femora yellow, tibiae and tarsi yellow-brown to brown. Front legs without conspicuous bristles, front tibia without dorsal bristle. Middle femora strongly swollen on basal one-half, arched ventrally and attenuated apically; anteroventral portion with a row of strong bristles extending from basal one-fourth to apical one-fourth, the terminal bristles shorter and closer together (fig. 2e); anteriorly with several long bristles past middle. Middle tibiae (fig. 2e-f) slender and curved, only slightly swollen on basal one-half; a posteroventral row and a shorter ventral row of short, straight bristles at basal one-third; one, sometimes two, long thin posteroventral bristles at middle; basal one-fifth with an anteroventral row of five or six comb-like bristles situated just behind an anterior row of slightly longer bristles, the anterior row terminating in one very long bristle; one very strong anterior bristle at basal one-third; apical one-half of anteroventral portion with several very long, hooked, widely spaced cilia; apical one-half of anterior face with shorter, finer, hooked cilia more densely placed. Apical two-thirds of basitarsi and most of second tarsomere with curled cilia on anterodorsal surfaces, the cilia about twice as long as the width of the tarsi. *Wings*: Hyaline. Fourth costal section about one-third longer than the fifth. Last section of M_{3+4} almost three times longer than the m crossvein. *Abdomen*: Black.

Length: body, 1.7 mm.; wings, 1.9 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7841) and seven male paratypes: Mt. Puu Kukui, Maui, October 24-26, 1966 (T. Saigusa); one male paratype: Puu Kukui Ridge, Maui, June 16, 1966 (D. E. Hardy). Paratypes in the University of Hawaii collection.

***Campsicnemus invaginatus* Tenorio, new species (fig. 3a-b).**

Similar to *C. williamsi* Van Duzee in the presence of an appendage near the apices of the middle femora. Differing, however, in the shape of the projection, by the presence of an invagination on the middle femora near the projection, and by the difference in chaetotaxy of the middle tibiae.

MALE. *Head*: Eyes contiguous for a distance equal to about four to five rows of eyes facets. Lower portion of face brown pubescent. Front and vertex dark brown covered with light brown pollen. First two segments of antenna yellow, third segment brown, about one and one-half times longer than wide and pointed at apex. *Thorax*: Largely yellow-brown. Four pairs of dorsocentral bristles, the third pair very weak; one row of acrostichals. Halteres yellow. *Legs*: Front legs and middle and hind femora largely yellow, the other segments yellow-brown to brown. Front and hind legs without conspicuous bristles. Middle femora moderately swollen on basal one-half, arched on ventral part toward apex; apical one-fourth of femora each with an anterior invagination extending inward through about one-half the width of the femur, the entrance of the invagination almost completely blocked by a thin extension of the femur arising just before the invagi-

nation (fig. 3b); immediately beyond the invagination, the femur is slightly expanded anteriorly, the expansion bearing a strong black bristle. Bristling on the middle femora includes: one row of long anteroventral bristles extending from the base to apical one-fourth; one distinct row of anterior bristles on basal one-half; a few other long anterior bristles irregularly placed. Middle tibia gently curved on basal section, slightly swollen on basal one-half; two closely appressed, thick, black ventral bristles at basal one-fifth, closely followed by about four short blunt bristles, in turn followed by two or three slightly longer, pointed bristles (fig. 3a); a ventral row of four long cilia past middle; a posteroventral row of erect bristles at basal one-third extending to apical one-third, most of the bristles longer than the width of the tibia. Basitarsi simple, less than one-half as long as the tibiae. *Wings*: Slightly fumose. Fourth costal section two-thirds longer than the fifth. Last section of M_{3+4} about three times longer than the m crossvein. *Abdomen*: Black.

Length: body, 2.1 mm.; wings, 2.7 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7842): Pepeopae, Molokai, July 30, 1959 (D. H. Habeck).

***Campsicnemus longiquus* Tenorio, new species (fig. 3c-e).**

Belonging to the group of species which has a small projection near the base of each middle tibia and middle tibiae sinuate. Differing from other species in this group by having the middle tibiae over two times as long as the middle femora, the dorsal surfaces of the basitarsi densely covered with long curved hairs, and the hind femora densely covered with long hair-like bristles on the anteroventral and posteroventral surfaces.

MALE. *Head*: Eyes contiguous on the face for a distance equal to about four rows of eye facets. Lower part of face gold pubescent. Front and vertex metallic blue-green, lightly coppery pollinose. Basal two segments of antenna yellow, third segment yellow-brown, about twice as long as wide, pointed at the apex. *Thorax*: Dorsum yellow-brown, a thin, dark brown vitta running through each dorso-central row almost to scutellum. Scutellum yellow. Pleura yellow except for a dark brown area on the metapleura. Four pairs of dorsocentral bristles, one row of acrostichals. Halteres yellow. *Legs*: Predominantly yellow except for a brown discoloration on the outside of middle coxae and the yellow-brown to brown middle tibiae and tarsi. Front femora each with a row of moderately to weakly developed posteroventral bristles at apical one-third; front tibiae each with a row of long, fine posterodorsal bristles at basal one-third. The chaetotaxy of the front legs is variable and the bristles described above are more developed in some specimens than in others. Middle femora thickened basally, strongly arched ventrally beyond middle to apex; a group of ventral bristles just beyond middle, variable in length (fig. 3c); a row of short, closely spaced posteroventral bristles at apical one-fifth extending ventrally to apex. Middle tibiae slender, slightly sinuate, and very long, about two times longer than middle femur; a small antero-

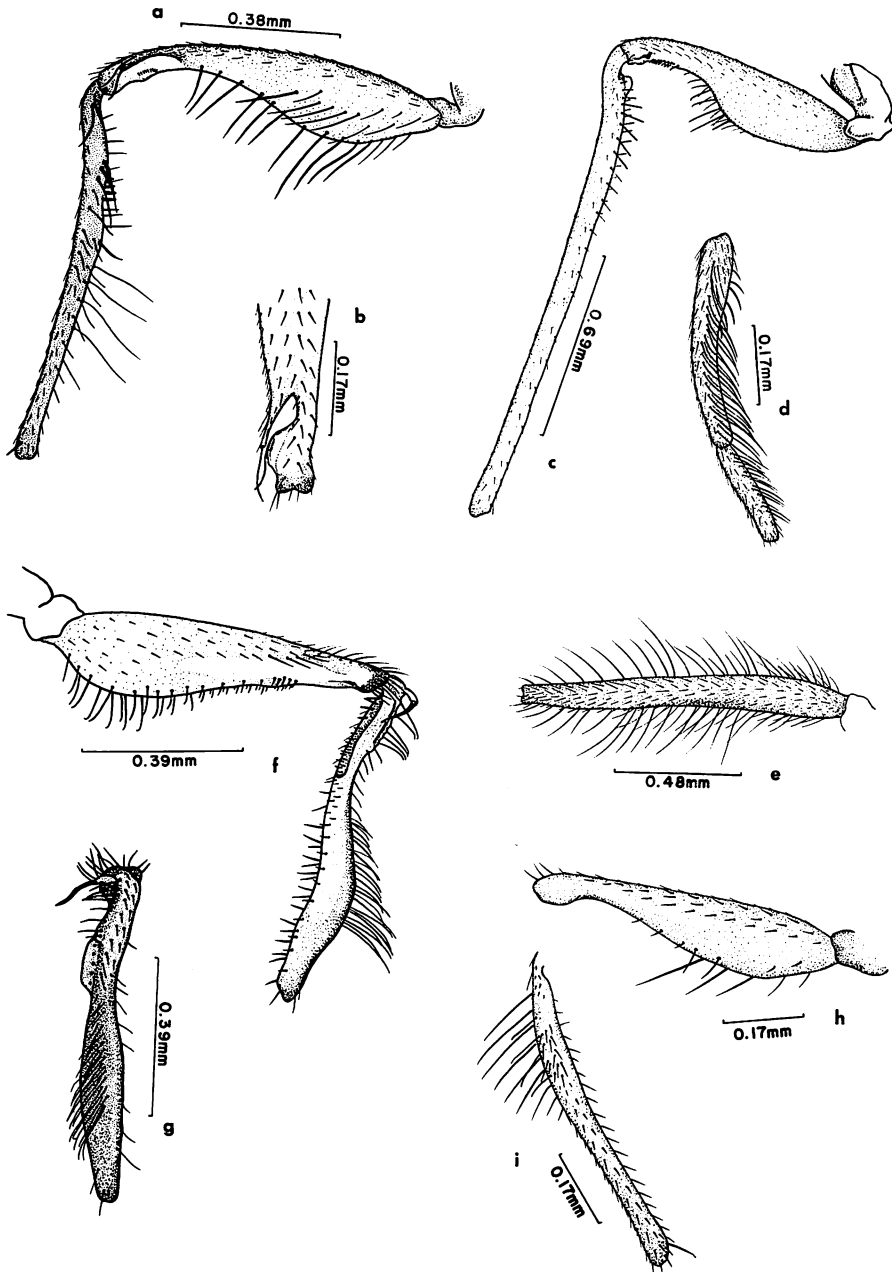


Figure 3—*Campsicnemus invaginatus*, n. sp.: a, middle leg, anterior view; b, apex of middle femur, dorsal view. *C. longiquus*, n. sp.: c, middle leg, posterior view; d, middle basitarsus and second tarsomere, dorsal view; e, hind femur, dorsal view. *C. uncatus*, n. sp.: f, middle leg, anterior view; g, middle tibia, dorsal view. *C. finitimus*, n. sp.: h, middle femur, anterior view; i, middle tibia, anterior view.

ventral rounded projection near base; a row of about five short, weak antero-dorsal bristles near basal one-third; a row of truncate posteroventral bristles, some longer than the width of the tibia, extends from near base to just before middle; another row of minute, basal, truncate bristles present on posteroventral surface extending to about basal one-fifth. Middle basitarsus (fig. 3d) less than one-fourth the length of the tibia and about two times longer than the second tarsomere, bowed, the entire dorsal surface densely covered with long, curved hairs and several bristles, which are about as long as the width of the basitarsus, on anterior surface at basal one-third; at least the basal one-half of second tarsomere ciliated anterodorsally. Hind femora each with rows of very long, curved, hair-like bristles extending the entire length of the anteroventral and posteroventral surfaces, and shorter, finer hairs covering the entire ventral surface (fig. 3e). *Wings*: Almost hyaline. Fourth costal section one-third longer than fifth. Last section of M_{3+4} about two and two-thirds times longer than the m crossvein. *Abdomen*: Largely brown dorsally, first segment and lateral and ventral parts of abdomen largely yellow.

Length: body, 1.9 mm.; wings, 2.2 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7843), two paratype males: Kulani, Hawaii, June 17, 1964 (D. E. Hardy). Paratypes in the University of Hawaii collection.

***Campsicnemus uncatus* Tenorio, new species (fig. 3f–g).**

A member of the group of species which has a projection on the middle tibia, basitarsi shorter than the tibiae, and the middle femora thickened basally. Differing from other species in this group by the hook-like projection at base of middle tibia, the two small overlapping expansions on basal one-half of the middle tibia, and the chaetotaxy of the middle legs.

MALE. *Head*: Head in poor condition in the specimen on hand, and I have been unable to ascertain whether the eyes are or are not contiguous. Lower face yellow pubescent. Front and vertex shining blue-purple, speckled with brown pollen. Antennae brown, third segment about twice as long as wide, pointed. *Thorax*: Specimen badly abraded, but appears as follows: mesonotum brown; pleura yellow to yellow-brown, black on metapleura and sides of metanotum; four pairs of dorsocentral bristles, no acrostichals. Haltere knobs brown, stems tinged with yellow. *Legs*: Front legs and all femora yellow, other segments brown. Front tibiae each with one posteroventral bristle beyond middle. Middle femora basally thickened, straight on ventral margin, concave preapically on anterior margin, the apex bearing long bristles and expanded on the anterior face; ventral surface of femur with moderately strong, apically bent bristles, becoming shorter beyond basal one-fourth and extending along ventral surface in several irregular rows to apical one-third, the bristles minute and closely spaced toward the apex (fig. 3f). Middle tibiae sinuous, thickened beyond middle, expanded above middle on anterior surface into two overlapping lobes, the more dorsal one smaller and

carrying a row of long cilia (fig. 3g); the anterior projection at base of tibia is in the form of a thin, curved, yellow lobe terminated by a stout, curved, black bristle, giving a hook-like effect. Bristles on the middle tibiae are as follows: dorsal and anterodorsal surfaces of swollen part with long cilia; entire ventral surface with several rows of short, sharp bristles, the posteroventral bristles longer than the others; underside of larger expansion with three or four very stout, blunter bristles near base. Middle basitarsus one-half as long as tibia. Hind femora each with a row of anteroventral bristles extending the entire length. *Wings*: Slightly fumose. Fourth costal section less than twice as long as fifth. Last section of M_{3+4} two and one-half times longer than the m crossvein. *Abdomen*: Black.

Length: body, 1.9 mm.; wings, 2.2 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7844): Pepeopae, Molokai, July 30, 1959 (D. E. Hardy).

GENUS EURYNOGASTER VAN DUZEE

Eurynogaster Van Duzee, 1933, Proc. Haw. Ent. Soc. 8:339.

Sweziella Van Duzee, 1933, Proc. Haw. Ent. Soc. 8:346. Synonymy by Parent, 1939, Proc. Haw. Ent. Soc. 10(2):249.

Uropacys Parent, 1935, Encyclopédie Entomologique Sér. B. II. Dipt. 8:80. Synonymy by Hardy and Kohn, 1964, Insects of Hawaii 11:167.

The genus *Eurynogaster*, known only from Hawaii, has in common with *Campsicnemus* a large prescutellar depression. It differs from *Campsicnemus* in the absence of acrostichal bristles, the m crossvein being longer than the last section of vein M_{3+4} , and having the genitalia comparatively well developed.

The genitalia of this genus display excellent diagnostic characters, which are usually sufficient in themselves to allow specific determinations. The drawings of the genitalia have been made with attention to fine detail, since not only are there discrete differences in the size and shape of the various lobes of the genital chamber, but there are also differences in the sculpturing of the surfaces.

Type species: *E. clavaticauda* Van Duzee (original designation).

CHECKLIST AND DISTRIBUTION OF *EURYNOGASTER* SPECIES

| | Hawaii | Maui | Molokai | Lanai | Oahu | Kauai |
|--------------------------------------|--------|------|---------|-------|------|-------|
| <i>ablusispina</i> n. sp. | | | | | × | |
| <i>aeruginosa</i> Hardy and Kohn | | | | | × | |
| <i>angusticercus</i> n. sp. | | | × | | | |
| <i>angustifacies</i> Hardy and Kohn | | | | | | × |
| <i>apicenigra</i> Parent | | | | | × | |
| <i>argentata</i> Hardy and Kohn | × | | | | × | |
| <i>binodata</i> Parent | | | | | × | |
| <i>bullata</i> Hardy and Kohn | × | | | | | |
| <i>callaina</i> Hardy and Kohn | | × | | | | |
| <i>cilifemorata</i> Parent | | × | | | × | |
| <i>clavastyla</i> Hardy and Kohn | | × | | | | × |
| <i>clavicauda</i> Van Duzee | | | | | × | |
| <i>concava</i> n. sp. | | | | | × | |
| <i>conspicua</i> Hardy and Kohn | | | | | × | |
| <i>crassicercus</i> Hardy and Kohn | | | | | × | × |
| <i>dolichostoma</i> Hardy and Kohn | × | | | | | × |
| <i>emarginata</i> n. sp. | | | | | | × |
| <i>exartema</i> Hardy and Kohn | | × | | | | × |
| <i>flavicrura</i> Hardy and Kohn | | | | | | × |
| <i>flaviventer</i> Hardy and Kohn | × | | | | | |
| <i>furva</i> Hardy and Kohn | | | × | | | |
| <i>fusticercus</i> Hardy and Kohn | | | | | | × |
| <i>gracilipennata</i> Hardy and Kohn | | | | | × | |
| <i>hamata</i> Hardy and Kohn | | | × | | | |
| <i>hawaiiensis</i> (Grimshaw) | × | | | | | |
| <i>hispida</i> Hardy and Kohn | × | × | | | | |
| <i>incompta</i> Hardy and Kohn | | | | | × | |
| <i>kauaiensis</i> Hardy and Kohn | | | | | | × |
| <i>lanceolata</i> n. sp. | | × | × | | | |
| <i>maculata</i> Parent | × | | × | | × | |
| <i>mediocris</i> n. sp. | | | | | × | × |
| <i>minor</i> (Parent) | | | | | × | × |
| <i>multispinosa</i> Hardy and Kohn | | | × | | | |
| <i>nigripedis</i> Hardy and Kohn | | × | | | | |
| <i>nigrohalterata</i> Parent | | | | | × | |
| <i>nudata</i> Hardy and Kohn | | | | | × | |
| <i>obscura</i> n. sp. | | | | | × | × |
| <i>obscurifacies</i> Parent | | | | | × | |
| <i>paludis</i> Hardy and Kohn | | | | | | × |
| <i>palustricola</i> Hardy and Kohn | | | | | | × |
| <i>parenti</i> Hardy and Kohn | | | | | | × |
| <i>pictilipennata</i> n. sp. | × | | | | | × |
| <i>pulverea</i> Hardy and Kohn | | | | | | × |
| <i>retrociliata</i> Parent | | | | | × | |
| <i>saxatilis</i> (Grimshaw) | | | | | × | |

* New island record.

| | | | | | |
|---------|---|---|---|---|---|
| Hawaii | × | | | | |
| Maui | × | × | × | × | |
| Molokai | | × | × | × | × |
| Lanai | × | | | | |
| Oahu | | × | × | × | × |
| Kauai | | × | | | |

* New island record.

KEY TO SPECIES OF *EURYNOGASTER*, BASED UPON MALES

(Revised from Hardy and Kohn, 1964)

1. Fourth abdominal tergum produced into a ventral process on each lateral margin.....2
 Fourth abdominal tergum without a noticeable ventral process7
- 2(1). Abdomen in lateral view not indented or angulate at fourth abdominal segment. Hind margin of fourth tergum straight, not concave.....3
 Abdomen angulate in lateral view, the hind margin of fourth abdominal tergum concave, the dorsum reduced to a narrow strip about one-fifth the length of the preceding segment. Cerci well developed *in situ*, the lower angle produced into a long, slender, slightly curved process. Middle femur with well-developed bristles near base, three long bristles surrounded by several short bristles.....*virida* Van Duzee.
- 3(2). Middle femur with ventral bristles on entire length.....4
 Middle femur with only about three long, pale bristles near base5
- 4(3). Middle femur with heavy, blunt ventral bristles, basal ones not distinctly longer than the others. Middle tibia without a series of anterior bristles; ventral series composed of short bristles terminating in a longer and thicker apical bristle.....6
 Middle femur with ventral bristles near base two times longer than other bristles of the series. Middle tibia with a row of anterior bristles and a row of ventral bristles.....*conspicua* Hardy and Kohn.
- 5(3). Wings with an irregular fuscous fascia at apical two-thirds extending from the costa through the m cross-vein (fig. 6g). Projection from the fourth abdominal tergum not appearing bilobed from lateral view (fig. 6d)*pictilipennata* n. sp.
 Wings without such a fuscous fascia. Projection on the fourth tergum distinctly bilobed in lateral view.....
*tergoprolixa* Hardy and Kohn.
- 6(4). Middle femur with more than one row of ventral bristles, the posteroventral series longest, nearly as long as the width of the femur, the bristles in each preceding row successively shorter. Posterior femur

- with a row of anteroventral bristles.....
.....**aeruginosa** Hardy and Kohn.
- Middle femur with only a single row of ventral bristles,
these almost as long as the width of the femur. Pos-
terior femur without anteroventral bristles.....
.....**gracilipennata** Hardy and Kohn.
- 7(1). Abdomen greatly enlarged at apex, genital segments
one and one-half to two times wider than the base of
the abdomen. Each cercus developed into a horny
process with thick, spinose bristles at apex and not
embedded in genital chamber.....8
Abdomen not so greatly enlarged.....13
- 8(7). Femora dark brown to black with green metallic sheen;
strong posteroventral bristles lacking on front femur
(except in *E. parenti* which has two).....9
Femora predominantly yellow, except for a slight brown-
ish discoloration at apices. Front femur with an
irregular series of anteroventral bristles, those nearer
the base about as long as one-third the width of the
femur; also with three or four distinct posteroventral
bristles, the longest being about two-thirds as long as
the width of the femur. Base of middle femur with
four anteroventral and two ventral bristles which are
better developed than others on femur.....
.....**flavicrura** Hardy and Kohn.
- 9(8). Femora dark, tibiae predominantly yellow.....10
Femora and tibiae entirely dark colored.....11
- 10(9). Front femur with basal two bristles of ventral series dis-
tinctly longer than others. Cercus stout, without a
distinct narrow stem; the widest part of the cercus
about one-third as wide as its length.....
.....**parenti** (Parent).
Front femur without long basal bristles and with short
ventral bristles on apical two-thirds. Hind femur with
fine ventral bristles on entire length. Cercus with a
long stem; the width of the apical, clavate part is
about one-third the length of the stem.....
.....**clavastyla** Hardy and Kohn.
- 11(9). Cerci elongate, each with a narrow stem and clavate at
apex, about as long as the ninth abdominal segment
and extending over the fourth to about the middle of
the third segment. Middle femur with three long ven-

- tral bristles at base, the middle one longest; the anteroventral bristles very short and extending to apex of segment; posteroventral bristles developed only on apical third of segment. Halteres dark brown.
 **fusticercus** Hardy and Kohn.
- Cerci about one-half the length of the ninth segment and not extending to the third abdominal segment. Middle femur with more than three, usually five to six, long ventral bristles near base. Halteres yellow. 12
- 12(11). Apex of cercus as wide as base, slightly constricted in middle; upper apex of cercus with three flat bristles, the uppermost bristle bent inward; the lower corner with two thick bristles; base of cercus with short hairs **crassicercus** Hardy and Kohn.
- Apex of cercus much narrower than base; bristles placed in three distinct groups: three on uppermost apex, the top bristle straight, not bent inward, two bristles on lower median corner, and about five near basal one-half. **palustricola** Hardy and Kohn.
- 13(7). Front femur with prominent ventral bristles extending along its entire length, or with short, stout, ventral spines 14
- Front femur devoid of ventral bristles or spines except for a few short anteroventral bristles near base in *E. pulverea* 24
- 14(13). Front femur with short, stout spines beneath. 18
- Front femur with fine ventral bristles. 15
- 15(14). Fourth abdominal segment without a ventral projection. Third antennal segment one-half longer than wide, arista thickened at apex. Front femur with short, fine ventral bristles. Front tarsus with fine cilia. Middle tibia straight, with short, fine ventral cilia. **minor** (Parent).
- Fourth abdominal segment with a ventral projection. Third antennal segment about as long as wide, arista normal. Front femur with moderately long bristles. Front tarsus without marked ciliation. Middle tibia sinuous 16
- 16(15). Wings with an elongate black bulla extending over the basal half of the first section of vein M_{3+4} . Projection from fourth abdominal sternum capitate.
 **bullata** Hardy and Kohn.

- Wings without such a bulla. Projection from fourth abdominal sternum lanceolate.....17
- 17(16). Middle tibia very sinuate on ventral margins, with swollen areas just before middle and before apex. Middle basitarsus sinuous and with a row of small ventral spines on the basal part.....**binodata** Parent.
Middle tibia only slightly sinuate, very slightly swollen on above-mentioned parts (fig. 5c). Middle basitarsus straight and without ventral spines.....**lanceolata** n. sp.
- 18(14). Fourth abdominal sternum without a projection. Front tibia with two well-developed dorsal bristles; ventral surface with short, fine bristles on entire length. Middle femur with a row of short, blunt spines on midventral section.....**obscurifacies** Parent.
Fourth abdominal sternum with a projection. Front tibia without dorsal bristles.....19
- 19(18). Sternal projection on fourth abdominal segment long, lancet-shaped20
Sternal projection on fourth abdominal segment small, short, and hook-like.....21
- 20(19). Front femur with six to eight short spines on anteroventral surface and with no posteroventral bristles. Middle and hind femora without ventral bristles....
.....**nigrohalterata** Parent.
Front femur with ten short anteroventral spines and with three or four strong bristles on the median posteroventral surface. Middle and hind femora with distinct ventral bristles....**multispinosa** Hardy and Kohn.
- 21(19). Halteres clear yellow.....22
Halteres brownish yellow to dark brown.....23
- 22(21). Legs yellow-brown to dark brown or black, with a distinct metallic green luster. Front femur with six to eight well-developed anteroventral spines. Middle femur with about sixteen short, rather stout, posteroventral bristles.....**saxatilis** (Grimshaw).
Legs predominantly yellow, not metallic green. Front femur with four well-developed anteroventral bristles, plus one or two minute preapical bristles. Middle femur with about twelve thin, rather hair-like posteroventral bristles.....**viridifacies** Parent.
- 23(21). Front femur with ten to twelve spines on anteroventral

- surface and with four to six spines on posteroventral surface near middle. Middle tibia straight.....
**hamata** Hardy and Kohn.
- Front femur with four to five black spines on anteroventral surface and with two median posteroventral bristles. Middle tibia slightly sinuate.....
**exartema** Hardy and Kohn.
- 24(13). Hind femur with long ventral cilia; some of the cilia are equal to or greater in length than the width of the femur25
 Hind femur without such ciliation, in *E. subciliata* with a row of posteroventral hairs, but these much shorter than the width of femur.....26
- 25(24). Halteres yellow. Middle femur with a ventral, preapical, broadly dentiform process; bristles on middle femur arranged in two irregular rows near middle of ventral surface, one row extending to apical one-fifth. Hind femur with long hairs on ventral and anteroventral surfaces.....**retrociliata** Parent.
 Halteres with brown knobs. Middle femur with one ventral row of bristles extending to about apical third. Long hairs on hind femur ventral.....
**cilifemorata** Parent.
- 26(24). Femora and tibiae entirely clear yellow, or at most with hind tibiae dark or with a brown discoloration at apex of hind femur.....27
 Femora and usually tibiae predominantly dark.....40
- 27(26). Pleura dark brown or metallic dusted with pollen.....28
 Pleura yellow on at least the lower half.....38
- 28(27). Apex of hind femur dark brown. No strong ventral bristles on middle femur. Face metallic, without dense grey pubescence36
 Apex of hind femur with not more than a slight brownish discoloration. Middle femur with well-developed ventral bristles. Face covered with grey pubescence.....29
- 29(28). Third antennal segment conical, elongate, three times as long as wide. Middle femur with three ventral bristles on basal half; the distal bristle of the set is two times longer than the basal two bristles; apical half of middle femur with four short ventral bristles

-**tanyceraea** Hardy and Kohn.
 Third antennal segment not elongate. Leg bristles not
 as above30
- 30(29). Front femur with a row of four posterior bristles near
 apex. Middle femur with about thirteen ventral
 bristles, the fourth from the base being the best de-
 veloped. Middle tibiae straight, not distinctly ciliated
**paludis** Hardy and Kohn.
 Front femur without apical bristles on posterior surface.
 Leg chaetotaxy not as above.....31
- 31(30). Ventral bristles of middle femur confined to median sec-
 tion, not extending beyond apical third of segment.....35
 Ventral bristles on middle femur extending approxi-
 mately to the apical fifth of segment.....32
- 32(31). Middle tibia with only one well-developed ventral bristle
 at apex. Middle femur with eight to nine ventral
 bristles, the second bristle from base more than two
 times longer than the others.....
**incompta** Hardy and Kohn.
 Middle tibia with more than one well-developed ventral
 bristle. Basal two bristles on middle femur subequal
 in length and longer than the other bristles in the
 series.....33
- 33(32). Hind femur with distinct anteroventral hairs. Front
 coxa yellow.....**subciliata** Hardy and Kohn.
 Hind femur without distinct anteroventral hairs. Front
 coxa usually dark, concolorous with the pleura.....34
- 34(33). Middle femur with one row of ventral bristles. No
 cluster of ventral setae before apex of middle tibia
**hawaiiensis** (Grimshaw).
 Middle femur with the ventral row of bristles formed
 into two irregular rows on the apical half (fig. 4a).
 Middle tibia with an apical cluster of short setae....
**ablusispina** n. sp.
- 35(31). Middle tibia slightly sinuate, with a row of anteroven-
 tral bristles just above the middle and with a cluster of
 short ventral bristles at the apex.....
**clavicauda** Van Duzee.
 Middle tibia straight, lacking anteroventral bristles and
 lacking a cluster of ventral bristles at apex. Front
 femur with several small anteroventral bristles near
 base.....**pulverea** Hardy and Kohn.

- 36(28). Middle tibia without anteroventral bristles. Tarsi long and slender, front tarsus about two times longer than tibia; middle basitarsus about three-fourths as long as tibia. Middle femur lacking fine ventral bristles. **nudata** Hardy and Kohn.
 Middle tibia with a strong anteroventral bristle on apical third to fourth. Front tarsus about one-third longer than tibia and middle basitarsus about one-half as long as tibia. Middle femur with some fine, erect, anteroventral bristles. 37
- 37(36). Middle tibia with rather long cilia along entire anteroventral surface; some of these hairs are at least two times longer than the width of the tibia. Hind tibia yellow with four anterodorsal bristles. Tarsi brownish yellow. Bristles of pronotum yellow. **apicenigra** Parent.
 Middle tibia lacking long cilia on anteroventral surface. Hind tibia and tarsus black. Bristles of pronotum black. Hind tibia with five pairs of anterodorsal bristles and with a small bristle just beyond base of segment. **nigripedis** Hardy and Kohn.
- 38(27). Hind femur entirely yellow. Upper parts of pleura metallic green overcast with brown pollen. 39
 Hind femur with a brown discoloration at apex. Pleura, lateral margins of mesonotum, and abdomen yellow. Middle femur with four long, slender bristles on basal half and six shorter, closely spaced, black bristles extending to apex; also a dense cluster of short black bristles on venter of apical portion. **xanthopleura** Hardy and Kohn.
- 39(38). Mouthparts elongate, two-thirds as long as head. Middle femur with a row of about eleven posteroventral bristles, the basal four or five heavier than the others. Ventral surface of middle tibia covered with very fine pubescence. **dolichostoma** Hardy and Kohn.
 Mouthparts short, about one-third as long as head. Middle femur with four widely spaced posteroventral bristles on basal two-thirds and with a series of four shorter bristles on apical one-third. **flaviventer** Hardy and Kohn.
- 40(26). Wings infuscated with brown at apex. Underside of middle femur with two long black bristles at basal fourth plus a row of very closely spaced flat, blunt

- bristles at basal two-thirds; also with four shorter, slender bristles near middle. **maculata** Parent.
Wings hyaline or evenly tinged with brown. Chaetotaxy not as above. 41
- 41(40). Mesonotum with three brown and two grey vittae extending the entire length. **vittata** Hardy and Kohn.
Mesonotum not vittate. 42
- 42(41). Face, thorax, and abdomen densely covered with silvery pubescence, except for the distinctly brown prescutellar depression and top of scutellum. Femora dark brown, tibiae brownish yellow.
. **argentata** Hardy and Kohn.
Not as above. 43
- 43(42). Face metallic. Middle femur lacking strong ventral bristles near base, but with slender bristle-like hairs along anteroventral surface; the apical bristles on lower posterior surface of middle femur are sometimes more strongly developed than the other setae. Abdominal segments each with a ring of strong bristles and dense shorter bristling. 44
Face grey pubescent. Some strong basal bristles developed on venter of middle femur. Abdomen not so densely bristled 45
- 44(43). Legs all black. About five anteroventral hairs present in a row near middle of middle femur. No anteroventral bristles or erect ventral setae present on middle tibia **hispida** Hardy and Kohn.
Ventral parts of all femora yellow. Anteroventral hairs of middle femur extending entire length of segment. A strong anteroventral bristle at apical third of middle tibia, and ventral surface of tibia densely covered with erect setae. **williamsi** Hardy and Kohn.
- 45(43). Ventral bristles of middle femur arranged on apical two-thirds of segment, or at least the majority of the bristles situated distad of the middle of the segment. . . . 46
Ventral bristles of middle femur usually ending near middle; if they do extend to about the apical third, as in *E. furva*, then there is an approximately equal number of bristles before and beyond the middle. 49
- 46(45). Hind femur with a row of anteroventral bristles on the apical half. Middle tibia basally curved. A cluster of

- small ventral bristles near apex of middle femur in addition to the anteroventral row of stronger bristles near middle (fig. 5g).....**mediocris** n. sp.
Hind femur lacking, or with relatively inconspicuous, anteroventral bristles. Chaetotaxy of middle femur not as above.....47
- 47(46). Ventral bristles of middle femur extending almost to apex. Middle tibia with no ventral brush near apex...48
Ventral bristles of middle femur ending at about apical third (fig. 6a). Middle tibia with short ventral brush near apex. Mesonotum distinctly metallic green densely covered with grey pollen.....**obscura** n. sp.
- 48(47). Anteroventral bristles of middle tibia usually well developed. Posteroventral bristling of the middle femur relatively evenly spaced to apex.....
.....**angustifacies** Hardy and Kohn.
Anteroventral bristles not developed on the middle tibia. Posteroventral bristling on middle femur irregular, falling into three groups of one, three, and two or three bristles, respectively, from the base of the femur (fig. 4c).....**angusticercus** n. sp.
- 49(45). Anterior bristle of middle tibia situated near or basad of middle of segment, separated from dorsal bristle by about one-fourth to one-fifth the length of the tibia...50
Anterior bristle situated at apical third of middle tibia, separated from the dorsal bristle by half the length of the tibia.....**spiniger** (Grimshaw).
- 50(49). Posteroventral surface of middle femur with four strong bristles at basal third, followed by about eight short bristles; the fourth bristle from the base is the strongest.....**callaina** Hardy and Kohn.
Posteroventral surface of middle femur with two strong basal bristles plus the smaller bristles.....51
- 51(50). Middle tibia with a row of three or more strong anteroventral bristles which are larger than the anterior bristles; apex of tibia with a cluster of short ventral bristles54
Middle tibia usually without anteroventral bristles, but if these are developed, they are not stronger than the anterior bristles and the third antennal segment is about two times longer than wide (*E. variabilis*); apex of tibia without a cluster of ventral bristles.....52

- 52(51). Front femur with a preapical row of about five moderately developed posteroventral bristles (fig. 7a). Middle femur with a row of posteroventral bristles at apical one-third, in addition to the row of ventral bristles (fig. 7b). **undulata** n. sp.
 Leg chaetotaxy not as above. 53
- 53(52). Third antennal segment about as long as wide. Middle tibia with several rows of short erect bristles on anteroventral, ventral, and posteroventral surfaces, extending the entire length of the segment (fig. 5a). Face narrow, equal in width at narrowest point to about 3 to 4 rows of eye facets. **emarginata** n. sp.
 Third antennal segment about two times longer than wide. Middle tibia not as above. Face broad, equal in width at narrowest point to about 7 to 9 rows of eye facets. **variabilis** Hardy and Kohn.
- 54(51). Middle and hind femora yellow on basal and apical fourth; ventral margins of hind femora concave at basal third, femur appearing slightly swollen distad of concave portion (fig. 4g). Tibiae and tarsi yellow to yellow-brown. **concava** n. sp.
 Legs predominantly dark brown to black. Hind femur not as above. 55
- 55(54). Entire mesonotum grey, faintly metallic blue or green. Middle femur with two long posteroventral bristles near basal third, plus five or six shorter bristles extending in a continuous row to apical third. Face at narrowest point about four rows of eye facets wide. **furva** Hardy and Kohn.
 Posterior part of mesonotum brownish pollinose. Posteroventral surface of middle femur with the two longest bristles near basal one-fifth to one-sixth, followed by two to four short bristles, then a space, and then three minute bristles just beyond middle. Face at narrowest point about six to seven rows of eye facets wide. **kauaiensis** Hardy and Kohn.

DESCRIPTIONS OF NEW SPECIES OF *EURYNOGASTER**Eurynogaster ablusispina* Tenorio, new species (fig. 4a-b).

A small dark-bodied species with predominantly yellow legs. Similar to *E. hawaiiensis* (Grimshaw) because the hind femora lack distinct bristles and the front coxae are concolorous with the pleura. This species differs in general coloration, bristling of the middle femora and tibiae, and details of the genitalia.

MALE. *Head:* Face silver-grey, narrowed at lower part to about three rows of eye facets wide. Front and vertex brown. Antennae brown, third segment about as long as wide. Ocellar bristles about as long as arista. *Thorax:* Mesonotum brown to bronze pollinose. Pleura and all coxae densely grey pollinose. Halteres clear yellow on the knobs, tinged with brown on the stems. *Legs:* Almost entirely yellow, slightly tinged with brown on dorsal and apical parts. Front and hind femora without conspicuous hairs or bristles; front tibiae each with one dorsal bristle at basal one-third. Middle femora each with a row of posteroventral bristles extending from basal two-fifths to the apical one-fifth, the second bristle from the base is the longest in the row, the apical bristles smallest and forming two closely packed rows of alternately placed bristles (fig. 4a). Middle tibiae (fig. 4a) slightly sinuate, slightly swollen before middle and before apex; a row of well-developed anteroventral bristles at basal one-sixth extending to the middle of the tibia, gradually increasing in length distally; middle tibiae also with a cluster of short ventral bristles near apex; one strong anterior bristle just above middle; two dorsal bristles, one at basal one-third, one preapical. *Wings:* Hyaline. Fourth costal section about twice as long as fifth. Last section of M_{3+4} as long as the m crossvein. *Abdomen:* Brownish pollinose. Genitalia as in figure 4b.

Length: body, 2.5 mm.; wings, 2.7 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7845): Mt. Kaala, Oahu, May, 1956 (M. S. Adachi).

Eurynogaster angusticercus Tenorio, new species (fig. 4c-d).

Close to *E. angustifacies* Hardy and Kohn because of the narrow face and extension of the ventral bristles of the middle femora almost to the apex, but differing in details of legs and genitalia.

MALE. *Head:* Face grey, narrowed below to width of three or four rows of eye facets. Front and vertex brown. Antennae black, third segment about as long as wide. Arista about twice as long as the remainder of the antenna. *Thorax:* Mesonotum densely brown pollinose with a submetallic green tinge. Pleura grey pollinose. Halteres yellow. *Legs:* Entirely dark colored. All coxae grey pollinose. Front and hind femora without conspicuous hairs or bristles; front tibiae each with one strong dorsal bristle at basal one-third. Middle femora slender and straight, each with a row of ventral bristles extending from basal one-third almost to the apex; the spacing of these bristles is such that they fall into three groups:

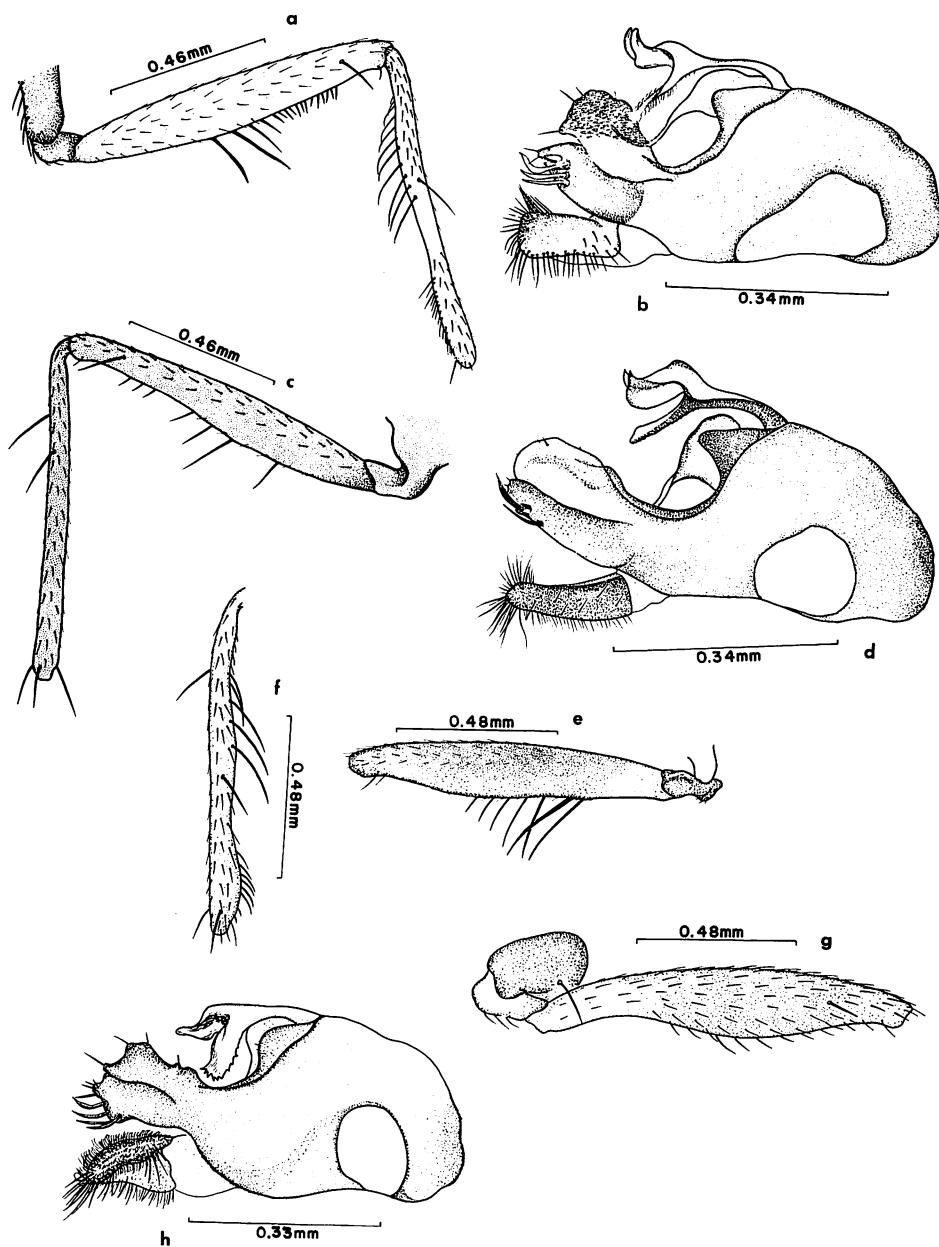


Figure 4—*Eurynogaster ablusispina*, n. sp.: a, middle leg, anterior view; b, male genitalia, lateral view. *E. angusticercus*, n. sp.: c, middle leg, anterior view; d, male genitalia, lateral view. *E. concava*, n. sp.: e, middle femur, posterior view; f, middle tibia, anterior view; g, hind femur, anterior view; h, male genitalia, lateral view.

the most basal group with one bristle, the intermediate group with three bristles, the first being strongest, the apical group with two or three bristles of equal length (fig. 4c). Middle tibiae (fig. 4c) straight, each with two dorsal bristles, one at basal one-fifth, the other preapical; two anterodorsal bristles, one at basal two-fifths, one preapical; and one ventral, apical bristle. Anteroventral bristles on middle tibiae not developed. Hind tibiae gradually thickened on the apical one-half, the apex about twice the diameter of the base; each tibia with three anterodorsal bristles, one at basal one-fourth, one past middle, and one postero-dorsal at basal one-fifth; one anterior and one posteroventral at apex. *Wings*: Hyaline. Fourth costal section two and one-third times longer than fifth. The last section of M_{3+4} almost as long as m crossvein. *Abdomen*: Brownish to bronze pollinose with a submetallic green sheen in direct light. Genitalia as in figure 4d.

Length: body, 2.6 mm.; wings, 2.8 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7846): Puu Kolekole, Molokai, July 30, 1959 (D. H. Habeck). One male paratype: Molokai, June 17, 1957 (D. E. Hardy), in the University of Hawaii collection.

Eurynogaster concava Tenorio, new species (fig. 4e-h).

Similar to *E. furva* Hardy and Kohn in the chaetotaxy of the middle legs, but differs in coloration, curvature of the hind femora, and details of the genitalia.

MALE. *Head*: Face grey pubescent on lower one-third, brown pollinose above; face narrow, equal in width to about three rows of eye facets at narrowest point. Front and vertex brown pollinose. Antennae dark brown, third segment slightly longer than wide. Arista about two-thirds longer than remainder of antenna. *Thorax*: Mesonotum brownish grey pollinose, slightly metallic purple in ground color. Pleura grey pollinose. Halteres yellow, stem brown basad. *Legs*: All coxae concolorous with the pleura. Femora predominantly brown, tibiae and tarsi yellow or yellow-brown. Front femora each with three small bristles on the posteroventral section before apex; one posterior and one dorsal bristle at basal one-third. Middle femora yellow on basal and apical one-fourth, brown medially; femur slightly compressed laterally on median part and slightly curved posteriorly; ventral surface of each femur with a row of about nine bristles extending from about basal one-third to apical one-third, the two basal bristles strongest and flattened, the remaining bristles gradually decreasing in length to apical one-third (fig. 4e); also with a row of fine anteroventral bristles on basal two-thirds. Middle tibiae each with a row of strong anteroventral bristles above middle (fig. 4f); a dense brush of short curved bristles ventrally on the thickened part of the tibia at apical one-fourth; two dorsal bristles, one at basal one-fourth, one preapical; one anterior bristle just below middle and one preapical. Hind femora yellow on basal and apical one-fourth; ventral margins of hind femur concave at basal one-third, the femur appearing slightly swollen distad of concave part (fig. 4g). *Wings*: Hyaline. Fourth costal section twice as long as fifth. The m crossvein slightly longer than last section of M_{3+4} . *Abdomen*: Brown pollinose, faintly

metallic green in ground color. Genitalia as in figure 4h.

Length: body, 2.5 mm.; wings, 3.0 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7847): S. E. Koolau Mts., Lanihuli, Oahu, February 9, 1919 (J. C. Bridwell).

Eurynogaster emarginata Tenorio, new species (fig. 5a-b).

This species belongs near *E. variabilis* Hardy and Kohn because it lacks anteroventral bristles and the ventral cluster of setae on the middle tibiae. It differs from *E. variabilis* in length of the third antennal segment, coloration, chaetotaxy of the middle and hind legs, and details of the genitalia which are quite distinct.

MALE. *Head*: Front, face, and vertex dark brown pollinose, dusted with grey. Face narrow, at narrowest point about equal in width to three or four rows of eye facets. Antennae brown, the third segment about as long as wide. *Thorax*: Mesonotum densely grey pollinose. Posterior part of humeri tinged with yellow. Pleura brown dusted with grey. Bulbs of halteres clear yellow, stems brown. *Legs*: Front coxae brown tinged with yellow; dorsal and anterior faces of front coxae sparsely setose; front femora and tibiae brown. Middle and hind coxae brown to grey pollinose; middle and hind femora predominantly brown, the apices yellow; tibiae and tarsi yellow. Front tibiae each with one dorsal bristle at basal one-fourth; no other strong bristles on front legs. Middle femora each with a row of six posteroventral bristles extending from basal one-fifth to about the apical one-third, the bristles in the row subequal in length, except for the second from the base which is the strongest in the row; also with a row of fine anteroventral hairs extending the entire length of the femur (fig. 5a). Middle tibiae straight and slender with no strong ventral or anteroventral bristles, but with several rows of short, erect bristles on the anteroventral, ventral, and posteroventral surfaces; these extend the entire length of the segment (fig. 5a); other bristles on the middle tibiae include two posterodorsal bristles, one at basal one-fourth, one preapical, one anterodorsal just below middle, and one posteroventral at apex. Hind femora with a row of short posteroventral bristles extending from the base to about the apical one-third. *Wings*: Hyaline. Fourth costal section twice as long as the fifth. Last section of M_{3+4} two-thirds as long as m crossvein. *Abdomen*: Densely grey pollinose. Genitalia as in figure 5b.

Length: body, 2.2 mm.; wings, 2.5 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7848): head of Nualolo Valley, Kauai, July 1952 (D. E. Hardy).

Eurynogaster lanceolata Tenorio, new species (fig. 5c-f).

Similar to *E. binodata* Parent because it has a lanceolate appendage on the fourth abdominal sternum, but differing in the smaller size, the presence of

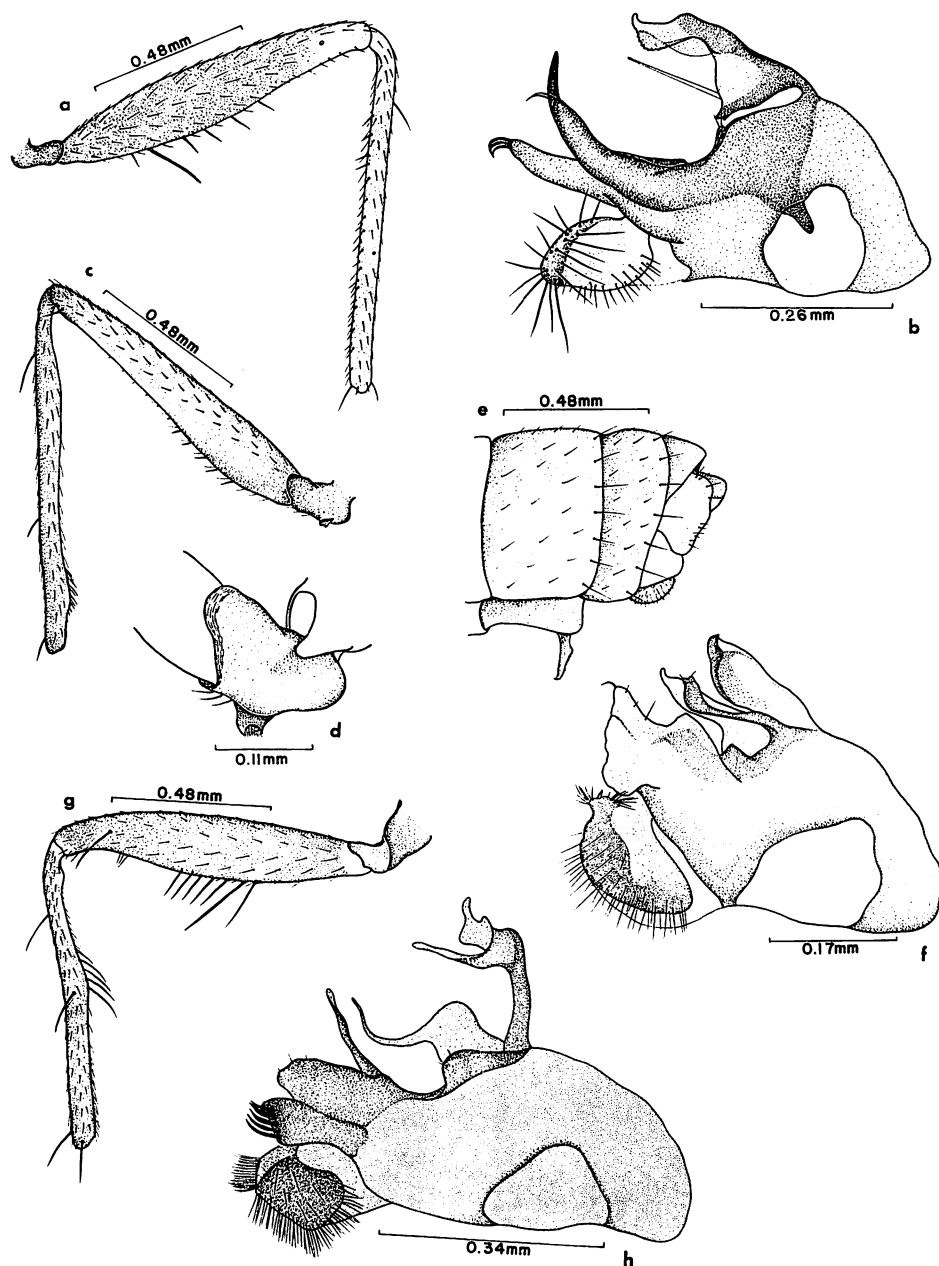


Figure 5—*Eurynogaster emarginata*, n. sp.: a, middle leg, anterior view; b, male genitalia, lateral view. *E. lanceolata*, n. sp.: c, middle leg, posterior view; d, appendage on middle trochanter, posterior view; e, apex of abdomen, lateral view; f, male genitalia, lateral view. *E. mediocris*, n. sp.: g, middle leg, anterior view; h, male genitalia, lateral view.

ventral bristles on the basal part of the middle femora, the less sinuate middle tibiae, and the middle basitarsi not sinuate.

MALE. *Head:* Front and face metallic green, face rather broad, the width equal to about nine to thirteen rows of eye facets. Ocellar bristles about two-thirds as long as the arista. Antennae black; third segment about as long as wide, rounded at apex, and densely grey pubescent; arista black, about two times longer than remainder of antenna. *Thorax:* Mesonotum metallic blue-green, in some specimens the disc is metallic purple. Pleura brown pollinose, metallic green in ground color. Halteres yellow-brown. *Legs:* Entirely brown with slight metallic green sheen. Front femora each with about five hair-like anteroventral bristles on basal half, the bristles equal in length to two-thirds the width of the femur; front tibiae each with two dorsal bristles, one near basal third, one near middle, and two anterodorsals before middle. Venter of middle trochanter with a curious, anteroposteriorly flattened projection which appears fringed on the apex (fig. 5d). (I have examined specimens of *E. binodata* Parent and have found a somewhat similar projection, but the type of the related species, *E. bullata* Hardy and Kohn, does not appear to have this projection.) Middle femora rather straight on ventral margins, with one ventral row of four to six short, stout, rather blunt bristles on the basal half becoming inconspicuous beyond middle; also a row of fine, hair-like anteroventral bristles on basal half (fig. 5c). Middle tibiae only very slightly curved on basal half, slightly thickened before apex (fig. 5c); three postero-dorsal bristles, the strongest at basal one-fifth, one below middle, and one pre-apical; three anterodorsal bristles, one near basal one-third, one very strong at middle, and one preapical; also a small cluster of anteroventral and ventral bristles on the slightly thickened preapical section of the tibia. Hind femora each with a row of relatively inconspicuous anteroventral bristles extending along the entire length of the segment; hind tibiae each with one dorsal bristle at basal third, and three anterodorsals, one at basal one-fourth, one at middle, one just below the middle. *Wings:* Distinctly brown fumose. Fifth costal section slightly longer than fourth at apex. Last section of M_{3+4} equal in length to m crossvein. *Abdomen:* Submetallic blue-green with a lanceolate projection on the fourth abdominal sternum which projects slightly anteriorly (fig. 5e). Genitalia (fig. 5f) very similar to those of *E. binodata* and *E. bullata*.

Length: body, 2.4 mm.; wings, 2.6 mm.

FEMALE. Similar to the male except for leg and genital characters; also lacking the trochantal and sternal projections. Face equal in width to thirteen to sixteen rows of eye facets. Front femora each with several weak anteroventral bristles on basal half. Middle tibiae each with two dorsal bristles, one at basal one-third, one below middle; three apical bristles. Hind legs as in the male except for two dorsal bristles on tibiae.

Length: body, 2.9 mm.; wings, 3.0 mm.

Holotype male (Bishop Museum Number 7849), allotype female, five paratype males, one paratype female: Pepeopae, Molokai, July 30, 1959 (D. H. Habeck). Paratypes in the University of Hawaii collection. Four additional males (not para-

types): Waikamoi, Maui, Flume Trail, July 9, 1968 (J. A. Tenorio), in the University of Hawaii collection.

Eurynogaster mediocris Tenorio, new species (fig. 5g-h).

Near *E. angustifacies* Hardy and Kohn because it has the bristles on the apical parts of the middle femora arranged in a cluster of three small bristles. Differs from *E. angustifacies* in other aspects of leg chaetotaxy, shape of the middle tibiae, and genital characters.

MALE. *Head:* Front and face grey, distinctly silver in direct light; vertex brown pollinose. Face about six rows of eye facets wide. Antennae black, third segment a little longer than wide. *Thorax:* Dorsum densely silvery-grey pollinose, faintly blue-green; scutellum and lateral edges of notum brown pollinose; pleura densely grey pollinose. Halteres brown. *Legs:* Predominantly brown. All coxae brown, covered with grey pollen, the anterodorsal part of front coxae with three strong bristles at apex and a row of smaller bristles running anteriorly. Front femora without conspicuous bristles; front tibiae each with one dorsal bristle above middle. Each middle femur with a row of seven strong anteroventral bristles at middle, the second bristle from the base is strongest; apical one-fourth of femur with a ventral group of three smaller bristles (fig. 5g). Middle tibiae (fig. 5g) slightly sinuate on basal half, with a row of anteroventral bristles above middle, the bristles gradually increasing in length distally; two dorsal bristles present, one at middle, one preapical; two anterodorsal bristles, one at middle, one apical. Hind femora each with a row of anteroventral bristles on apical half. *Wings:* Hyaline. Fourth costal section about two times longer than fifth. Last section of M_{3+4} equal to about one-half the length of the m crossvein. *Abdomen:* Metallic blue-green in ground color covered with brown pollen. Genitalia as in figure 5h.

Length: body, 2.2 mm.; wings, 2.5 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7850) and paratype male: Waipahoe, Kauai, January 13, 1944 (N. Krauss). Paratype in the University of Hawaii collection.

Eurynogaster obscura Tenorio, new species (fig. 6a-b).

Close to *E. angustifacies* Hardy and Kohn because of the narrow face and because the ventral bristles of the middle femora are placed on the apical two-thirds; differs from *E. angustifacies* in coloration, presence of a short ventral brush on the middle tibiae, and details of the genitalia. This species is also close to *E. furva* Hardy and Kohn in leg chaetotaxy and coloration, but the femoral bristles of *E. furva* begin closer to the base and there is an about equal number of bristles before and beyond the middle of the segment; in *E. obscura* the majority of the bristles are situated beyond the middle of the segment. The genitalia of *furva* are also different.

MALE. *Head:* Face brownish grey pollinose, about equal in width to three rows of eye facets at narrowest point. Front and vertex brown-green pollinose.

Antennae dark brown, third segment about as long as wide; arista about two and one-half times longer than the remainder of the antenna. *Thorax*: Dorsum densely grey pollinose, metallic blue-green in ground color. Scutellum bronze pollinose, metallic green in ground color. Pleura grey. Halteres glued to body, but apparently yellow. *Legs*: All coxae brown covered with grey pollen. Femora predominantly brown; other segments yellow to yellow-brown. No conspicuous hairs or bristles on front and hind femora. Front tibiae each with one posterodorsal bristle at basal one-third. Middle femora each with a row of posteroventral bristles extending from just before middle to apical one-fourth, the second bristle in the row strongest and the apical five bristles short and closely spaced (fig. 6a). Middle tibiae (fig. 6a) straight, slightly swollen before middle and at apex, several anteroventral bristles just above middle, gradually increasing in length apically; ventral brush at apical one-fourth short and sparse; middle tibia also with one strong anterior bristle just above middle and two dorsal bristles, one at basal one-fourth, one preapical. *Wings*: Hyaline. Fourth costal section about two times as long as the fifth. Last section of M_{3+4} two-thirds as long as the m crossvein. *Abdomen*: Submetallic blue-green covered with brown to bronze pollen. Genitalia as in figure 6b.

Length: body, about 2.2 mm.; wing, 2.5 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7851): Alakai Swamp, Kauai, July 10, 1928 (A. M. Adamson).

***Eurynogaster pictilipennata* Tenorio, new species (fig. 6c-g).**

This species belongs to the group of species which lacks ventral spines or bristles on the front femora and has a projection on each lateral margin of the fourth tergum of the male. It is closest to *E. tergoprolixa* Hardy and Kohn because it has only three long pale bristles near the base of the middle femora; the genitalia are almost identical to those of *E. tergoprolixa*. This species differs quite distinctly, however, in its much larger size, coloration of body and legs, the pictured wings, and the lateral appearance of the abdominal processes; these are bilobed in *E. tergoprolixa* as seen from lateral view, while in *E. pictilipennata* the bilobation of the processes is not apparent in lateral view.

MALE. *Head*: Front grey pubescent, very narrow, at narrowest point about equal in width to two rows of eye facets. Vertex and front brown pollinose, greyish around the eye orbits. Occipital bristles yellow and conspicuous. Basal two segments of antennae yellow, third segment brown, about as wide as long. *Thorax*: Mesonotum brown pollinose. Pleura densely grey pollinose. Halteres yellow. *Legs*: Yellow except for the following: middle and hind coxae concolorous with pleura; apices of hind femora discolored with brown; hind tibiae brown on basal half, yellow-white on apical half; basal one-third of hind basitarsi brown; last tarsomere on all legs white. Front femora and tibiae devoid of conspicuous bristles or hairs. Middle femora each with three or four long, flattened, yellow ventral bristles at basal fourth, the longest of these almost twice the width of the femur; also with a

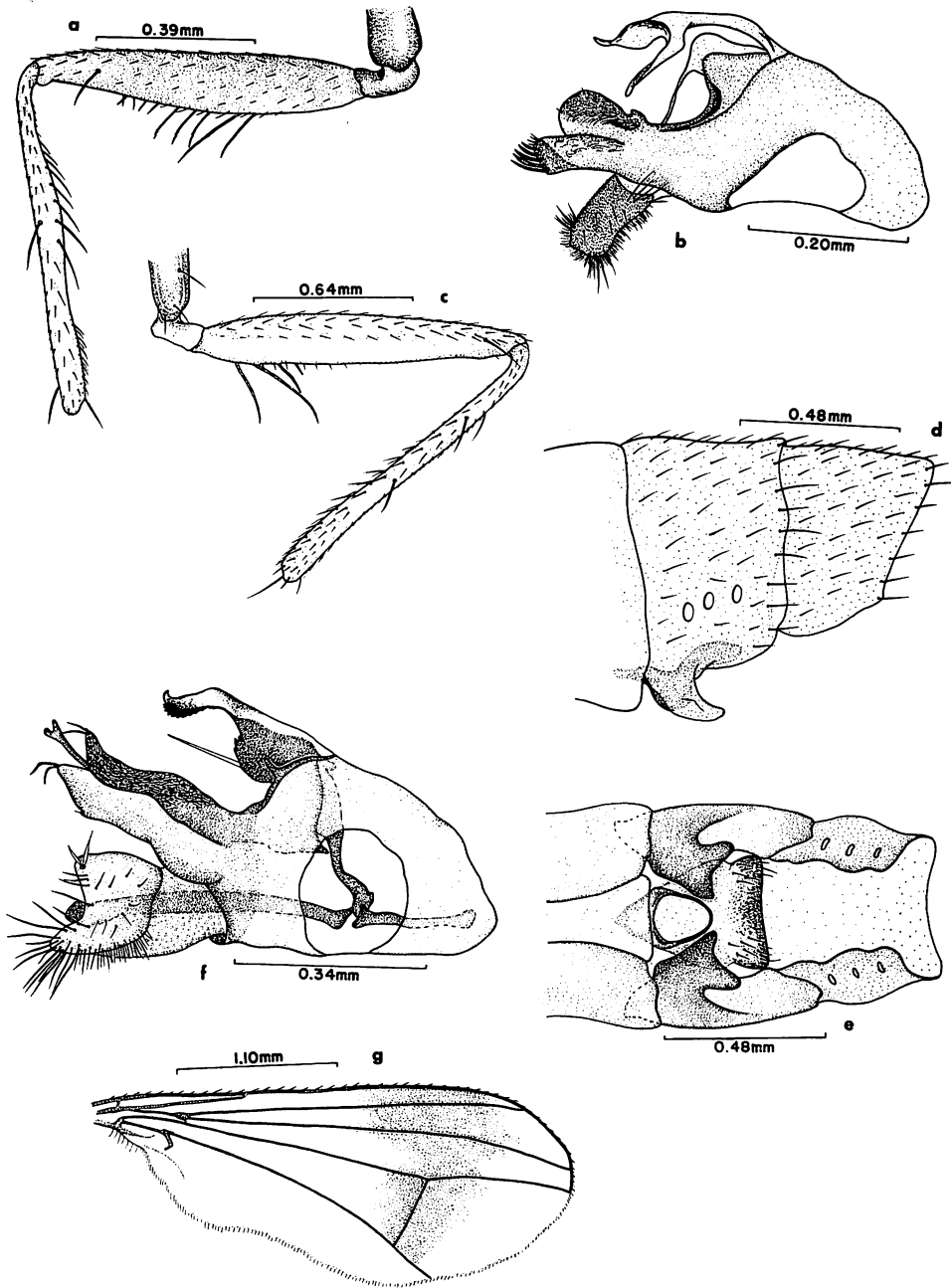


Figure 6—*Eurynogaster obscura*, n. sp.: a, middle leg, anterior view; b, male genitalia, lateral view. *E. pictilipennata*, n. sp.: c, middle leg, anterior view; d, fourth abdominal segment, lateral view; e, projections on fourth abdominal tergum, ventral view; f, male genitalia, lateral view; g, wing.

row of fine, yellow, inconspicuous hairs along the anteroventral surface ending at about middle of femur (fig. 6c). Middle tibiae straight, with one row of relatively strong ventral bristles extending from about the middle to the apex and about equal in length to the width of the tibia (fig. 6c); one row of suberect anteroventral bristles running from basal one-third and becoming inconspicuous before apex. Middle basitarsi equal in length to middle tibia. Hind femora lacking conspicuous bristles; hind tibiae each with one small anterodorsal bristle near middle, plus two apical bristles; apical ventral bristle of hind basitarsi yellow. *Wings*: Hyaline on basal half and at apex, an irregular fuscous band extending from the costa to vein M_{3+4} and surrounding the m crossvein (fig. 6g). Fourth costal segment about two and one-half times as long as the fifth. Last section of M_{3+4} about two-thirds as long as the m crossvein. *Abdomen*: Brown pollinose, the abdominal hairs yellow to yellow-brown. The process from the fourth tergum projects posteriorly, does not appear lobed from lateral view (fig. 6d), but is distinctly bilobed in ventral view (fig. 6e). Between the tergal processes is a round transparent hump on the fourth sternum; this hump is not present between the projections of *E. tergoprolixa*. Genitalia as in figure 6f.

Length: body, about 3.2 mm.; wings, 3.3 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7852): Bird Park, Kilauea, Hawaii, June 25, 1963 (D. E. Hardy).

Eurynogaster undulata Tenorio, new species (fig. 7a–e).

Near *E. variabilis* Hardy and Kohn because of the lack of well-developed anteroventral bristles on the middle tibiae and the lack of a ventral brush, but differing in the narrow face, other aspects of leg chaetotaxy, and genital characters.

MALE. *Head*: Lower half of face densely grey pubescent; upper half grey to brown pollinose. Face narrow, about three to four rows of eye facets wide at narrowest part. Front and vertex brown. Antennae black, third antennal segment about as long as wide. *Thorax*: Mesonotum coppery pollinose with a distinct metallic green sheen. Pleura and all coxae grey-brown pollinose with a slight metallic green sheen. Haltere knobs clear yellow, stems slightly tinged with brown. *Legs*: Predominantly brown, femora with a green sheen. Front femora each with a preapical row of about five moderately developed posteroventral bristles, the most distad being the strongest (fig. 7a); front tibiae each with one posterodorsal bristle at basal one-third. Middle femora each with a row of three to four unevenly spaced ventral bristles at basal one-third, the most basad smallest and weakest and the second from the base the strongest (fig. 7b); a row of three weak ventral bristles just distad of middle; a row of posteroventral bristles at apical one-third; and one strong anterior bristle at apical one-third. Middle tibiae straight, with two posterodorsal bristles, one at basal one-fourth, one preapical; three anterior bristles, one at basal third, one below middle, and one preapical; one row of ventral and one row of anteroventral bristles, both rows weakly developed (fig. 7c). Hind femora each with a row of inconspicuous anteroventral

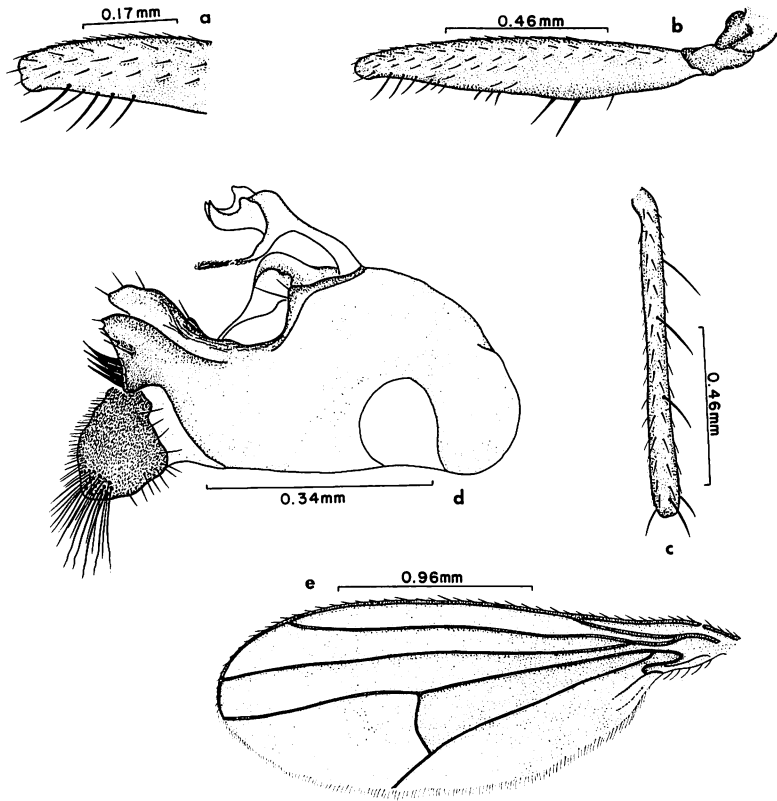


Figure 7—*Eurynogaster undulata*, n. sp.: a, apex of front femur, posterior view; b, middle femur, posterior view; c, middle tibia, anterior view; d, male genitalia, lateral view; e, wing.

bristles extending the entire length of the segment. *Wings*: Brown fumose. Fourth costal section about twice as long as the fifth. Last section of M_{3+4} about one-half as long as the m crossvein which is slightly convex (fig. 7e). *Abdomen*: Submetallic green covered with brownish pollen. Genitalia as in figure 7d.

Length: body, 2.2 mm.; wings, 2.6 mm.

FEMALE. Unknown.

Holotype male (Bishop Museum Number 7853) and paratype male: Puu Kolekole, Molokai, July 30, 1959 (D. E. Hardy). Paratype in the University of Hawaii collection.

NEW NOMENCLATORIAL CHANGES

Campsicnemus flavipes Hardy and Kohn.

Campsicnemus flavipes Hardy and Kohn, 1964, Insects of Hawaii 11:86-87.

Campsicnemus flavithorax Hardy and Kohn, 1964, Insects of Hawaii 11:87-88.

New Synonymy.

Examination of the type specimens of *C. flavipes* and *C. flavithorax* reveals that both have the same size projection at the base of the middle tibia and identical bristling on the middle tibiae and femora. Although there is some variation in the length of the third antennal segment, in some specimens only slightly longer than wide, and in others about one and one-half times longer than wide, I consider these two species to be conspecific.

Syntormon flexibilis Becker.

Syntormon flexibilis Becker, 1922, Capita Zool. 1(4):55.

Syntormon distortitarsis Van Duzee, 1933, Proc. Haw. Ent. Soc. 8:338.

Synonymy by C. E. Dyte, 1967, The Entomologist 100:174.

Conchopus acrosticalis (Parent), new combination.

Paraphrosylus sp. Bryan, 1926, B. P. Bishop Museum Bull. 31:68.

Cymatopus acrosticalis Parent, 1938, Konowia, 16:69.

Paraphrosylus acrosticalis (Parent), Hardy and Kohn, 1964, Insects of Hawaii 11:251.

Conchopus acrosticalis (Parent), S. Takagi, 1965, Insecta Matsumurana 27(2):52.

NEW DISTRIBUTION RECORDS

Campsicnemus bicrenatus Hardy and Kohn.

Campsicnemus bicrenatus Hardy and Kohn, 1964, Insects of Hawaii 11:45.

Specimens examined: Maui, Mt. Puu Kukui, West Maui, October 24–26, 1966 (T. Saigusa): 12 males.

Campsicnemus brevipes Van Duzee.

Campsicnemus brevipes Van Duzee, 1933, Proc. Haw. Ent. Soc. 8:314.

Specimens examined: Maui, Waikamoi, July 6, 1967 (J. P. Murphy): 2 males, 3 females.

The males from Maui differ from those from Oahu in the absence of the two large bristles on the middle trochanter. In all other respects, they are identical to the Oahu specimens.

Campsicnemus chauliopus Hardy and Kohn.

Campsicnemus chauliopus Hardy and Kohn, 1964, Insects of Hawaii 11:57–58.

Specimens examined: Maui, Mt. Puu Kukui, West Maui, October 24–26, 1966 (T. Saigusa): 18 males, 3 females.

Campsicnemus crinitibia Van Duzee.

Campsicnemus crinitibia Van Duzee, 1933, Proc. Haw. Ent. Soc. 8:331.

Specimens examined: Hawaii, Kaiholena, July 1958 (D. E. Hardy). Taken in a banana thicket: 1 male.

Campsicnemus flavipes Hardy and Kohn.

Campsicnemus flavipes Hardy and Kohn, 1964, Insects of Hawaii 11:86–87.

Campsicnemus flavithorax Hardy and Kohn, 1964, Insects of Hawaii 11:87–88.

Specimens examined: Maui, Flume Trail, Waikamoi, July 14, 1964 (D. E. Hardy): 1 male. Maui, Kula Pipeline, Waikamoi, July 30, 1965 (H. T. Spieth): 1 male; April 1967 (J. P. Murphy): 2 males.

Campsicnemus flaviventer Hardy and Kohn.

Campsicnemus flaviventer Hardy and Kohn, 1964, Insects of Hawaii 11:88–90.

Specimens examined: Maui, ridge above Kaulalewelewe, August 4, 1964 (D. E. Hardy); August 24, 1964 (J. W. Beardsley); July 31, 1965 (H. T. Spieth); May 28, 1965 (D. E. Hardy); August 1958 (D. E. Hardy): 6 males.

Campsicnemus fumipennis Parent.

Campsicnemus fumipennis Parent, 1938, Konowia 16:76.

Specimens examined: Hawaii, Hualalai, July 7, 1967 (J. A. Tenorio): 1 male, 3 females.

Campsicnemus fusticulus Hardy and Kohn.

Campsicnemus fusticulus Hardy and Kohn, 1964, Insects of Hawaii 11:94-95.

Specimens examined: Maui, Auwahi, June 17 and August 20, 1965 (J. W. Beardsley): 3 males, 2 females. Oahu, Maunakapu, March 29, 1968 (J. A. Tenorio and D. Ashdown): 3 males, 5 females from forest floor.

Campsicnemus gloriosus Van Duzee.

Campsicnemus gloriosus Van Duzee, 1933, Proc. Haw. Ent. Soc. 8:318.

Campsicnemus concavus Van Duzee, 1933, Proc. Haw. Ent. Soc. 8:316. Synonymy by Hardy and Kohn, 1964, Insects of Hawaii 11:95.

Specimens examined: Hawaii, Kaiholena, Kohala Mts., July 1950 (D. E. Hardy): 1 male.

Campsicnemus lepidochaetes Hardy and Kohn.

Campsicnemus lepidochaetes Hardy and Kohn, 1964, Insects of Hawaii 11:111-113.

Specimens examined: Maui, Hanaula, July 9, 1968 (J. A. Tenorio): 3 males.

Campsicnemus obscurus Parent.

Campsicnemus obscurus Parent, 1938, Konowia 16:78.

Specimens examined: Hawaii, Kaiholena, Kohala Mts., July 1958 (D. E. Hardy): 1 male.

Campsicnemus penicillatus Parent.

Campsicnemus penicillatus Parent, 1934, Mem. Soc. Natl. Sci. Nat. Math. Cherbourg 41:300.

Specimens examined: Kauai, Kawaikoi Stream, July 27, 1963 (D. E. Hardy): 1 male. Maui, Auwahi, June 17, 1965 (D. E. Hardy): 1 male.

The third antennal segment in the specimens from Maui, Molokai, and Kauai is about one and one-half times as long as wide, whereas this segment in Hawaii specimens is about as long as wide. All other characters are the same.

Eurynogaster cilifemorata Parent.

Eurynogaster cilifemorata Parent, 1939, Proc. Haw. Ent. Soc. 10:241.

Specimens examined: Maui, Waikamoi, July 14, 1964 and same locality, 1958 (D. E. Hardy): 4 males, 1 female.

The specimens from Maui differ from the Oahu specimens in having dark brown legs and a small, but definite, preapical bump on the ventral surface of the middle femur. Other external characters and genitalia are the same.

Eurynogaster dolichostoma Hardy and Kohn.

Eurynogaster dolichostoma Hardy and Kohn, 1964, Insects of Hawaii 11:191-193.

Specimens examined: Hawaii, Hualalai, July 6, 1967 (D. E. Hardy): 3 males, 5 females.

These Hawaii specimens are probably *E. dolichostoma*, as the genitalia are almost identical, differing only in the penal sheath extensions and in the strength of some genital hairs. These specimens seem to differ from the Kauai specimens in the entirely dark brown pleural coloration in both male and female, in the less dense bristling of the middle femora and in the slimmer tibiae. Because of the elongate mouthparts and the similarity of the genitalia, these specimens probably fit here.

Eurynogaster williamsi Hardy and Kohn.

Eurynogaster williamsi Hardy and Kohn, 1964, Insects of Hawaii 11:228-229.

Specimens examined: Maui, Waikamoi, June 16, 1965 (D. E. Hardy): 3 males.

Syntormon flexibilis Becker.

Syntormon flexibilis Becker, 1922, Capita Zool. 1(4):55.

Syntormon distortitarsis Van Duzee, 1933, Proc. Haw. Ent. Soc. 8:338.

Specimens examined: Molokai, Mauna Loa, June 28, 1967 (J. A. Tenorio): 3 males from morning glory. Molokai, Pupaakai Stream, June 27, 1967 (J. A. Tenorio): 2 males.

DESCRIPTIONS OF FEMALES, PREVIOUSLY UNKNOWN

Eurynogaster williamsi Hardy and Kohn.

Eurynogaster williamsi Hardy and Kohn, 1964, Insects of Hawaii 11:228-229.

Female essentially fitting the description of the male (Hardy and Kohn, 1964) except for genital differences and lack of ornamentation on the middle and hind legs. Face about twelve rows of eye facets wide. Characteristic strong antero-ventral bristle of male also present near apical one-third of middle tibia of female.

Length: body, 3.3 mm.; wings, 3.6 mm.

Seventeen females taken with eleven males from the following location: Molo-kai, Pepeopae, July 30, 1959 (D. E. Hardy).

Eurynogaster conspicua Hardy and Kohn.

Eurynogaster conspicua Hardy and Kohn, 1964, Insects of Hawaii 11:189-190.

Female similar to the male, but lacking ornamentation on middle legs and the ventral process on fourth abdominal tergum. Face about twelve to thirteen rows of eye facets wide. Middle tibia with one anterodorsal and one posterodorsal bristle at basal one-sixth and one anterodorsal above middle.

Length: body, 3.8 mm.; wings, 3.9 mm.

Seven females taken with three males from the following locations: Oahu, Mauna Kapu, March 29, 1968 (J. A. Tenorio and D. Ashdown); four females taken with two males from Oahu, Waianae Mts., April 18, 1968 (J. A. Tenorio and D. Ashdown).

APPENDIX TO SUPPLEMENT (PHORIDAE)

***Spinophora genitalis* Schmitz.**

Reported by Dr. C. R. Joyce as new to Hawaii and tentatively identified as *Paraspiniphora* sp. (Proc. Haw. Ent. Soc., 1965, 19(1):25). Dr. W. W. Wirth of the USDA at the U. S. National Museum, subsequently determined this species as *Spiniphora genitalis* Schmitz (Proc. Haw. Ent. Soc., 1967, 19(3):334).

***Megaselia (Megaselia) cochlophila* Borgmeier.**

Described as a new species from Oahu by T. Borgmeier, Proc. Haw. Ent. Soc., 1967, 19(3):373.

LITERATURE CITED

DOLICHOPODIDAE

- BECKER, T.
1922. DIPTEROLOGISCHE STUDIEN. DOLICHOPODIDAE DER INDOAUSTRALISCHEN REGION. *Capita Zoologica* 1(4):1-247.
- BRYAN, E. H., JR.
1926. DIPTERA. In: *Insects of Hawaii, Johnston Island, and Wake Island*. B. P. Bishop Museum Bull. 31:67-71.
- GRIMSHAW, P. H.
1901-1902. DIPTERA. In: David Sharp, Ed., *Fauna Hawaiiensis* 3(1):11-17; *Diptera Suppl.* 3(2):80-81. Cambridge University Press.
- HALIDAY, A. H.
1832. The characters of two new dipterous genera, with indications of some generic subdivisions and several undescribed species of Dolichopodidae. *J. Zool.* 5:350-367.
1851. FAMILY XXI. DOLICHOPODIDAE, pp. 144-221. In: F. Walker, H. T. Stainton, and S. J. Wilkinson, *Insecta Britannica: Diptera*, Vol. 1 (by Walker). London. 314 pp., 10 pls.
- HARDY, D. E., and M. ADACHI KOHN.
1964. DOLICHOPODIDAE. In: *Insects of Hawaii* 11:1-258. University of Hawaii Press, Honolulu, Hawaii.
- PARENT, O.
1934. DIPTERES DOLICHOPODIDES EXOTIQUES. *Mem. Soc. Nationale Sci. Nat. et Math. Cherbourg* 41:254-308.
1935. DIPTERES DOLICHOPODIDES NOUVEAUX. *Encyclopedie Entomologique*, Paris. Sér. B. II. *Diptera* 8:59-96, 43 figs.
1938. QUELQUES DIPTERES DOLICHOPODIDES DES ILES HAWAII. *Konowia* 16(1):67-84.
1939. DOLICHOPODIDES DES ILES HAWAII RECUELLIS PAR MONSIEUR F. X. WILLIAMS, PRINCIPALEMENT AU COURS DE L'ANNEE 1936. *Proc. Hawaiian Ent. Soc.* 10(2):225-249.
- TAKAGI, SADAŌ.
1965. A CONTRIBUTION TO THE KNOWLEDGE OF THE MARINE SHORE DOLICHOPODIDAE OF JAPAN. *Insecta Matsumurana* 27(2):52.
- VAN DUZEE, M. C.
1933. NEW DOLICHOPODIDAE FROM THE HAWAIIAN ISLANDS (DIPTERA). *Proc. Hawaiian Ent. Soc.* 8(2):307-357.
- WILLIAMS, F. X.
1939. BIOLOGICAL STUDIES IN WATER-LOVING INSECTS. PART III. DIPTERA OR FLIES. B. ASTEIIDAE, SYRPHIDAE, DOLICHOPODIDAE. *Proc. Hawaiian Ent. Soc.* 10(2):288-315.

PHORIDAE

- BORGMEIER, T.
1967. A NEW MEGASELIA FROM HAWAII (DIPTERA: PHORIDAE). *Proc. Hawaiian Ent. Soc.* 19(3):373-374, 1 fig.
- JOYCE, C. R.
1965. NOTES AND EXHIBITIONS. *Proc. Hawaiian Ent. Soc.* 19(1):25.
1967. NOTES AND EXHIBITIONS. *Proc. Hawaiian Ent. Soc.* 19(3):334.

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